

Australian

OCTOBER, 1981. ISSUE 110. Vol 10 No. 5

\$1.50*

MODEL RAILWAY

Magazine

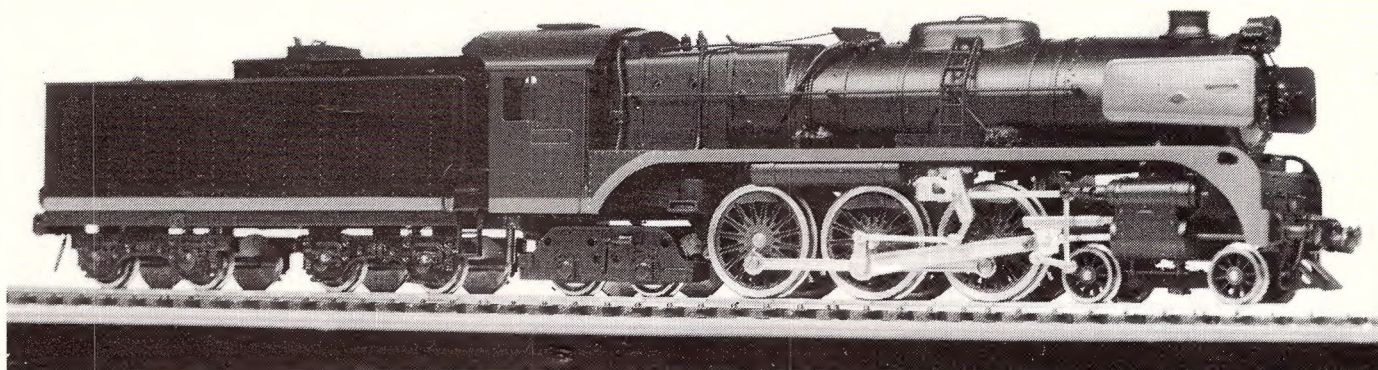


HUB Cars

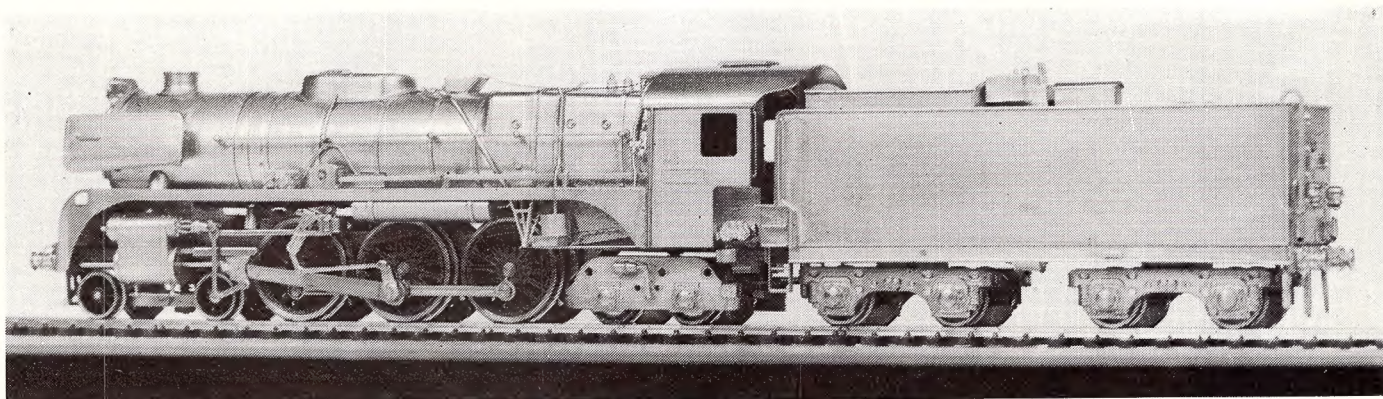
VicRail 'ELX' Open Wagon

**MODEL BUILDING PROJECTS: Poison Wagon and
a VicRail Open Wagon.**

THE MIGHTY V.R. "R" CLASS HUDSON ... — COMING AGAIN ... IN HO SCALE ...



Designed and built by North British Locomotive Company, the prototype of this Class, weighing 187 tons, proved to be one of the largest Hudson locomotives ever assembled in the erecting shop of the builders. Unveiled at the Trade Fair, Glasgow, in 1952 and subsequently shipped in a total quantity of 70 units, these Locomotives acquitted themselves fully and won fame in express passenger service on the V.R. The first and only previous production of this OO/HO gauge brass Locomotive was in 1967 and these views of the model testify as to the skill and accuracy of our manufacturer in Japan. The tooling reproducing every feature which serves to make the "R" Class Hudson distinctive in design and pleasingly different in appearance from any other locomotive. The special Tender and Loco trailing truck frames are there — drop forged to reproduce their unusual features, whilst the "SCOA-P" pattern drivers are authentic down to the full 16 fluted spokes. All driving wheel brasses are springborne and equalise in hornways, whilst in the new production drive will be provided by a powerful 'can' type motor, working in conjunction with an axle hung gear box. Price is expected to work out in the \$500 bracket and first production samples are now on view at our premises. Reservations are now being accepted. No stock will be available off-the-shelf when the model comes out and once production is commenced, further orders cannot be accepted. Accordingly, don't miss this rare opportunity to add the "R" Class Locomotive to your motive power roster! ... Reserve your model *now*.



Other News from the *DOCKYARD* ...

Long part and parcel of most plastic diesel motive power, so-called 'traction tyres' are intended to make up for the lack of weight available for adhesion, but whatever the merits, these tyres invariably impart to such models an objectionable, rough riding motion on the track. Little wonder, therefore, that the demand for brass diesel motive power continues to increase, as more look for smooth running, quality performance. With powerful drive and all axles geared. Our July HO/HOn3 Brass Car & Loco. Price List (84c posted, per copy) includes some 20 different HO diesel Locomotives and more are slated for manufacture through the second half of 1981. These include EMD Models SW1000, SW1500, MP-15DC and MP-15AC. Santa Fe's famous 1A and 1B, the original 1800 H.P. Units built to power the first "Super Chief". These will come painted. To follow will be the FM Erie built A & B Locomotives, in both U.P. and P.R.R. versions. Also the big Union Pacific GE U-50-C Locomotive ... Due in August from 'United' are the HO U.P. Modernised 'FEF-1' 4-8-4 Locomotives. Whilst from Sunset, the big HO S.P. 2-8-4 'AC-9' articulated Locomotives are coming in the same month ... The HO N. & W. "Jawn Henry" Steam Turbines are scheduled to be on the 'ready track' about early

September ... For traction fans of the Pacific Electric, coming shortly are the never before modelled 100 Series City Car, in HO scale ... For three foot gaugers working in HOn3, coming up from Key Models are the 2-8-0 #41 Locomotives. Expected in early September ... A revised edition of our HO Gauge Fittings Price List is now available. This covers the full range of HO car, loco, and 'way hardware carried in stock by 'Dockyard. Including our full range of brass structural sections and milled basswood. Price: \$2.50 per copy. Postage, 55c extra ... We are anxious to hear from all those who missed out on the recent delivery of the HO 'AD-60' Class Beyer-Garratt Locomotive. Surplus production parts will enable assembly of a handful of additional Locomotives and these will be allocated on a first come, first served basis ... By the time these notes appear in print, large new stocks of HOn3 rolling stock Kits are expected to hand. These will include: Tomalco D&RGW Stock Car and High Sided Gondola Car. The latter both Standard and Modern. Rail Line Co. D&EGW '3000' Series Box Car and Idler Flat Car. From E. & B. Valley, the RGS Caboose No. 0404, D&RGW No. 319 Coach, both Open and Closed Vestibule; D&RGW Baggage/Coach/Combine;

Continued on page 78

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A R KITS

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 MHO Guards van \$12.95
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See last issue of **AMRM** for comprehensive list

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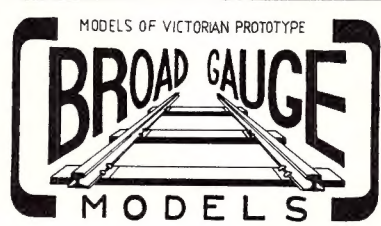
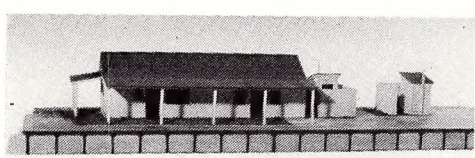
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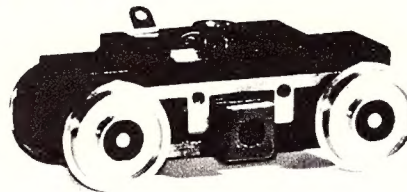
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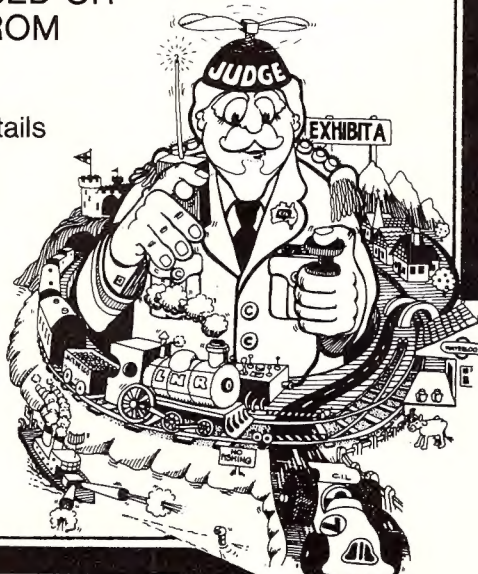
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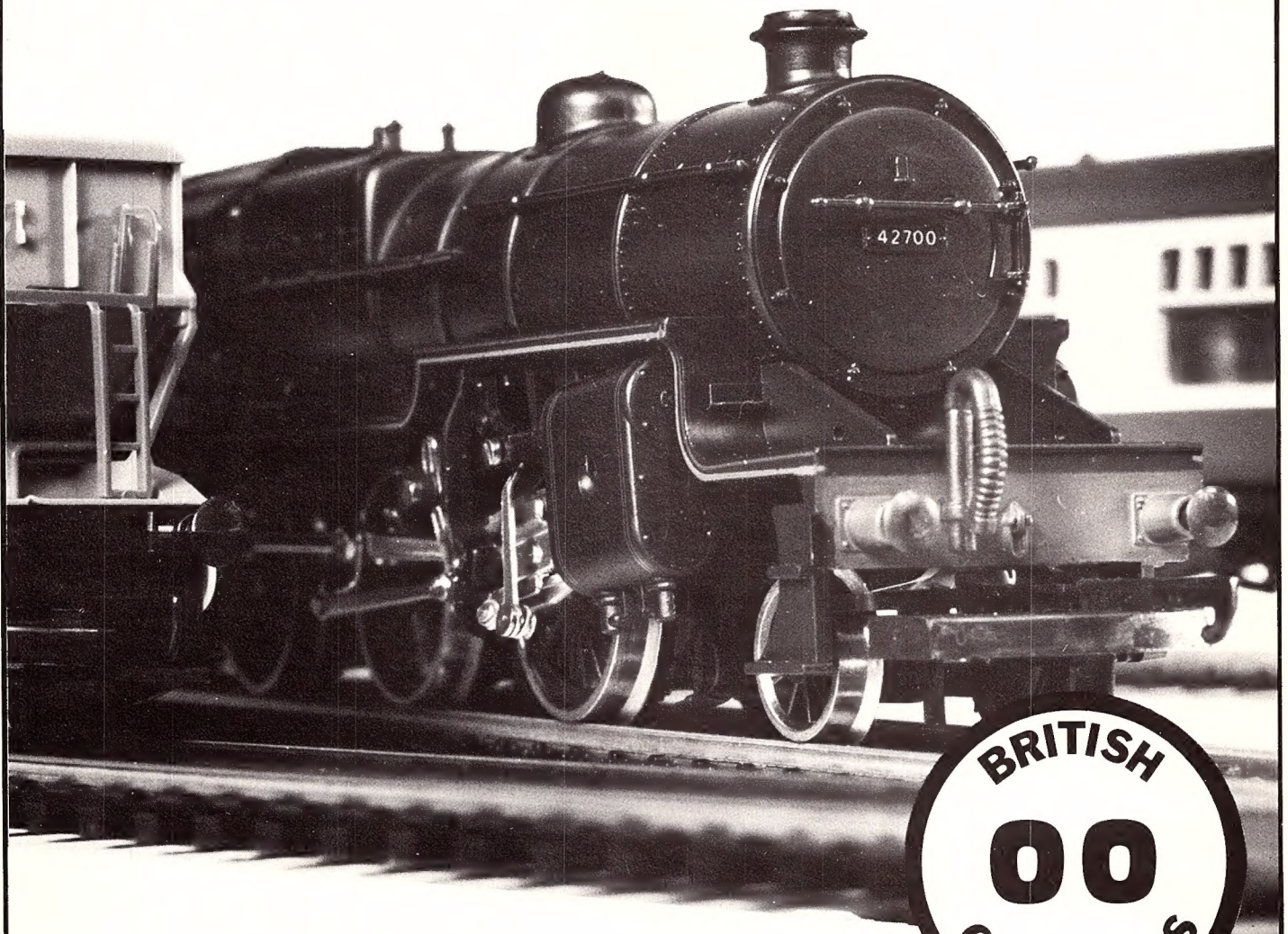
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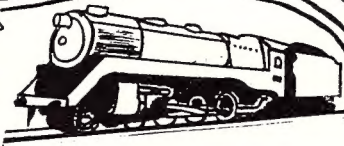
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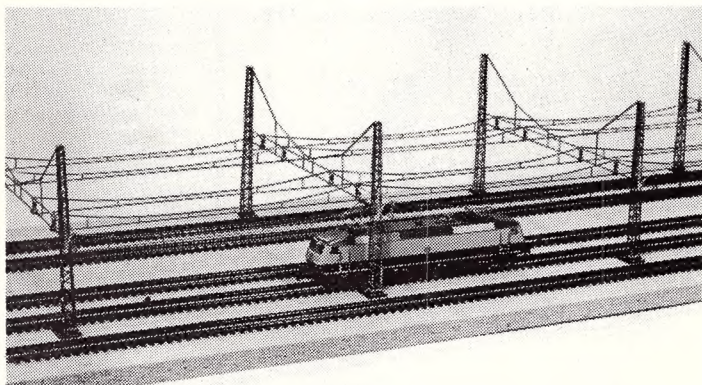
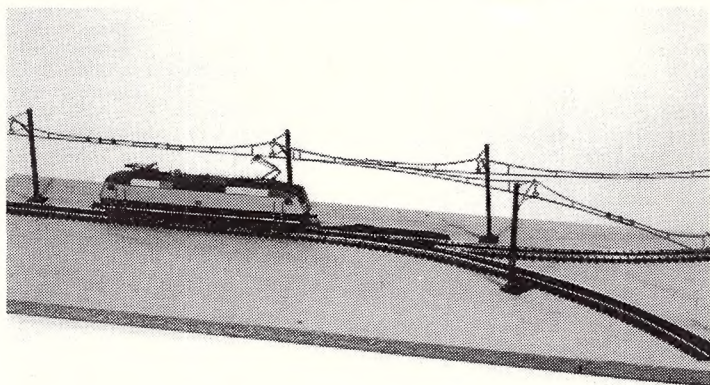
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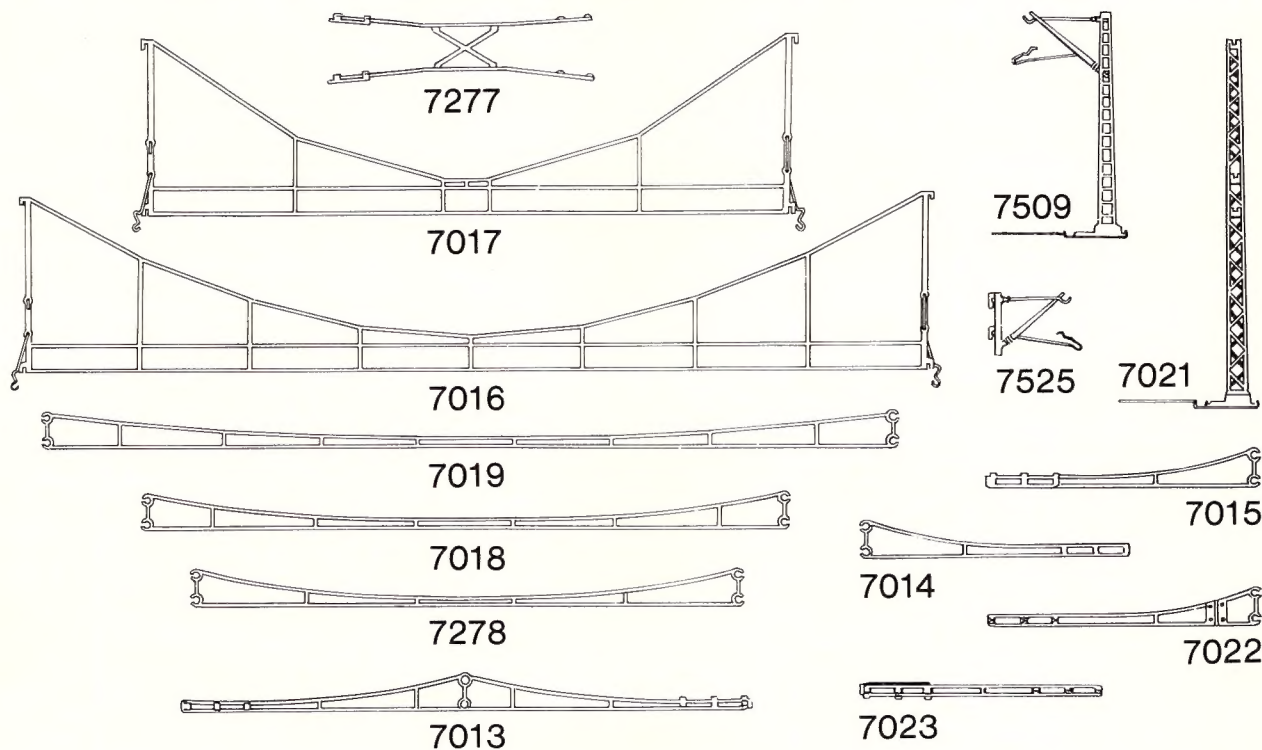
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All the above are available at the price of 45¢ each, including post and packaging.

No. 80 — September/October, 1976

The above issue is available at the price of 70¢ each, including post and packaging.

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No. 84 — May/June, 1977

No. 86 — September/October, 1977

No. 87 — November/December, 1977

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No. 90 — May/June, 1978

No. 91 — July/August, 1978

No. 92 — September/October, 1978

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No. 94 — January/February, 1979

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No. 101 — March/April, 1980

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No. 103 — July/August, 1980

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No. 104 — September/October, 1980

No. 105 — November/December, 1980

No. 106 — January/February, 1981

No. 107 — March/April, 1981

Issues 104 to 107 are available at the price of \$1.60 a copy including post and packing.

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No. 110 — September/October, 1981

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SOUTHERN CROSS MODEL RAILWAY ASSOCIATION

Secretary: Trevor Moore.

Membership Enquiries: PO Box 317, Epping, NSW 2121.

The Annual Membership Fee for the SCMRA is \$10 from March to February and \$6 Joining Fee. Applications must be received by the 1st of the odd month to meet our mailing list deadlines. For applications received between 2nd September and the 2nd January the annual fee is \$5 plus \$6 Joining Fee.

Membership entitles you to participate in the activities of the Association, to receive AMRM and our newsheet Booster Standards, Recommended Practices and Information Sheets covering model railway practice are included in the joining kit together with a vinyl ring binder and are also issued at regular intervals.

For further details write to the secretary or contact the divisional representative.

Meetings are usually organised on the second Saturday on each month in New South Wales, Victoria and Queensland. For further details and location please contact the divisional representative.

DIVISIONAL REPRESENTATIVES:

Queensland:

Barry Turner,
15 Aberfoyle St,
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Ph: (07) 378 7683.

New South Wales:

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New South Wales:

October 10: Annual Picnic BBQ at Parramatta Park.
November 14: Meeting at SSMW Luddenham and layout running session.
December 12: Meeting and layout running at W. Ryde.

Victoria:

October 10: Meeting at Surrey Hills.
November 14: Meeting at Wessex Lines Croydon.
December 12: Railfan Trip.

Queensland:

October 10: Meeting at Grovely.
November 14: Preparation for Brisbane Hobby Show.
December 12: Christmas BBQ at Pine River Dam.

EXHIBITIONS

SYDNEY — NSW October 3, 4, 5 at the Westco & Ford Pavilions (RAS Showgrounds) at Driver Avenue, Moore Park. Open Sat 10am-7.30pm, Sun 10am-6pm, Mon 10am-6pm. Admission \$2.00/\$1.00. Organised by the Australian Model Railway Association, New South Wales Branch.

BOWRAL — NSW October 10, 11 at Bowral Infants School. Admission \$1.50/\$0.50. Organised by the Berrima District Model Railway Club.

WAITARA — NSW November 21, 22 at Waitara Public School, cnr Myra St and Edgworth David Ave, Waitara. Admission \$1.50 (Family \$3). Organised by the North West 'N' Gauge Model Railway Club.

BRISBANE — QLD November 22, 23, 24, 25, 26, 27, 28 at R.N.A. Showgrounds. Open 10am-7pm (Sun), 12 noon - 9.30pm (Mon-Fri) 9am-6pm (Sat). Admission \$1.50/c. Organised by the Brisbane Hobby Exhibition.

ORANGE — NSW December 5, 6 at Scout Hall, 260 Anson Street, Orange. Open 9am-9pm (Sat), 10am-4pm (Sun). Admission 80/20. Organised by the Central West Railway Modeller's Association.

AMRM

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John Casey, Phil Curnow, Bob Gallagher

SEPTEMBER/OCTOBER, 1981

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Australian Model Railway Magazine

COMMENT

LOOKING TO THE FUTURE

Readers have probably noticed that photographic support for some recent VR articles has come from a Keith Buckland and a John Buckland. Although both hail from Melbourne and are acquainted with each other, they are not related. The one main thing they have in common is that each has been photographing trains for many years.

Many of their photographs of VR items are now extremely valuable, because they depict scenes long since gone; for instance, shots of X class 2-8-2's at work. In some cases, the photos were taken merely because the camera was with them rather than because there was anything special to photograph. Did they know at the time how appreciative future modellers would be of even the "casual" shot?

There is a moral in all of this, particularly for younger readers. As you accumulate photographs — and for that matter, books and magazines — hang onto all of it, with the future in mind. It is certain that material currently being accumulated will be popular with AMRM readers in twenty years' time. So if you have benefited from the Bucklands and other such sources, take a leaf from their book and do a few favours for the coming generation of modellers.

Ian Weickhardt

THEFT

There is, in Australia, a growth in the very distasteful art of acquiring that hard to get model by the method of theft. The excessive high second-hand value of models no longer made, make this mode of acquisition attractive to some of our ranks.

There is a need for all modellers to become aware of the sudden availability of models in large numbers, and before indulging in escalating the already inflated prices of second-hand models, ascertain from where the models came. If the resulting answer is not satisfactory a quick call to the police is necessary. Despite the reluctance of us colonials to call in the police, one must remember that to buy stolen property is in itself illegal and any goods so purchased can be returned to the owner free of charge, and the receiver loses out.

Furthermore, clubs and associations should reconsider the practise of issuing lists of members' names and addresses so freely, even to members. (Communication can still be attained via astute club/association committeemen.) On the other hand modellers can take the precaution of requesting that their address be not made available to membership lists, which seem to find their way into all types of hands, even mail advertisers.

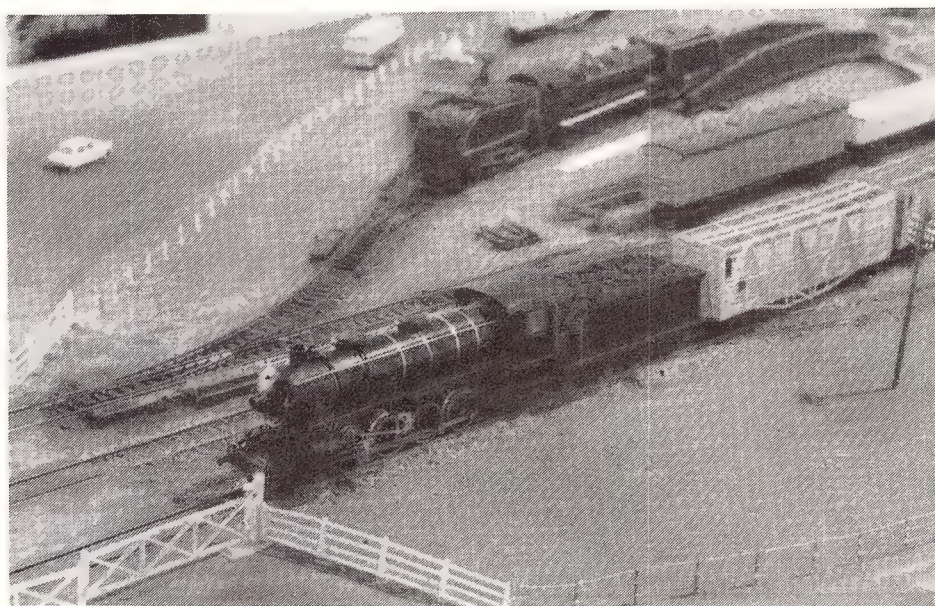
A modeller can also protect his goods a little by ensuring the premises are secure from easy entry, keeping a good log of the models, having them insured with a company that accepts that most brands appreciate in price as they become rare, and by dissuading the 'unknown' casual visitor from just walking in on a meeting.

To laugh and push this subject aside can be disastrous, for you could be the next victim!!

Bob Gallagher

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An AC16 hauls a stock special through Gatton, while a Beyer Garret stands in the turntable road. Keith Gall supplied the photo that illustrates his Queensland Railways based models. The AC16 fitted with a C16 tender was based on a Triang Evening Star, with the boiler and tender being built from styrene and brass. The models are built to 4mm scale and at present run on a 19ft by 12ft layout. Hopefully Keith will present an article on the layout and his modelling methods soon.

ON THE COVER: CPH 16 and CPH 24 roll into Tumut after connecting with the Down mail at Cootamundra. 4818 waits for the railmotors to exchange the staff so that it may head off with the Batlow goods in May 1979. Ron Preston photograph.



MODUS OPERANDI

II. The Lakeland Railway: Pillars of operation

David Leaman

In Part I the reasons for, and basis of, an operating system were outlined and some of the basic but less important features of the Lakeland Railway operation were assembled (AMRM May/June 1981).

This part completes the discussion of the operating code by considering the layout-controlled aspects which make every code unique. These factors have greatest impact on timetable production and general operation once a timetable has been created.

Practicalities

At this stage we need to critically evaluate how our stock, all of it, performs in service and we need to consider any sources of electrical or frictional loss and other problems in the layout or stock. Nothing will be perfect and there may be continuing problems which will ease with treatment. In the early phase of testing and system introduction I kept a complete accident register detailing location, stock involved, speeds, cause. These records form a guide to essential regulations and line, loco or stock restrictions. I have continued to keep a record for all but yard incidents (unless major or regularly suspected) and thus there is a firm reference catalogue for Boards of Enquiry, rule revision and trouble spots.

Regular maintenance, coupling adjustments, clean wheels and motor tuning (where possible) all help and electrical appliances should be checked for reliable operation and minimal resistive loss at joints and terminations. But the vital factor is trackwork, which must be first rate on main lines where speeds will be highest. Awkward, doubtful trackwork should only be tolerated where a set of guarding rules can be kept literally with precise train monitoring (or until funds allow some reconstruction).

On the Lakeland Railway there is a continuing process of problem attrition and eradication. As things improve even the little problems stand out; items which could be ignored when major problems existed. The state of the main lines is crucial since trains are not under manual control for other than station entry/exit at Lakeside or junction entry/exit movements. Some features of the branch lines require restrictions but spot control is possible over these since demands are few and spaced. A group controlled layout need not be affected; limits anywhere for whatever reason can be observed since all traffic is continuously controlled. The exact manner of operating the Lakeland Railway is described in Part IV.

Line sections

The first step in system introduction is a review and tabulation of the various line segments in the layout. These may be set by physical limits, block limits or special running zones. Table II-1 presents the line section data for the Lakeland Railway. Sections 1, 3, 4, 7, 8 are whole branch segments; 2, 5 incorporate the entire oval main line and only 6 is a block segment. The four main line blocks are not distinguished. Were they longer or under group control then this might not be so. The items "false scale" and "approximate distance" (for geography) are explained under Train Speeds. The first three columns of Table II-1 are layout fact, column 4 is actual length in metres multiplied by scale (87=HO) all divided by 1000 to yield scale kilometres. Column 5 is scale kilometres multiplied by clock rate (6:1). Column 6 is column 5 less 16% and column 7 is 3 rounded.



1959: Timetable E1: The up "Valkyrie" (IC14) climbing toward Lakeview. The "Valkyrie" is the fastest service in Lakeland — all stock and locos are rated for maxima of 200 kph.

Route sections

Table II-2 integrates the data of Table II-1 to yield the actual route distances and hence the geography and route map of Lakeland (Figure II-1). Note that while some local trains from Lakeview to Lakeside may use either main line all other traffic and through traffic uses line 2 as the down and line 1 as the up line.

Line restrictions

We may have some idea of how fast our trains could run (from Part I) but we need to consider whether they can be allowed to run up to those speeds. The layout, realistic effect and experience will decide this. Experience or test running will expose any difficulties. Sources of derailment or high speed uncoupling will need to be expunged unless the operator is prepared to control traffic over them against a speed limit. This may be realistic but impractical for a solo operator with a high traffic density. On the main lines, the Lakeland Railway insists on near perfection given speed ratings on stock up to 200 kph. Problems persist on branch lines but these can be tolerated and trains controlled as required. Thus no restrictions exist for the main lines; elsewhere restrictions may be permanent or temporary. Restrictions usually apply on pointwork, grades, reverse curves etc. Table II-3 lists some examples of special hazards while Table

II-6 includes the line section limits. Special allowances may apply to certain loco classes and in every case of restriction the train will/should be under full control.

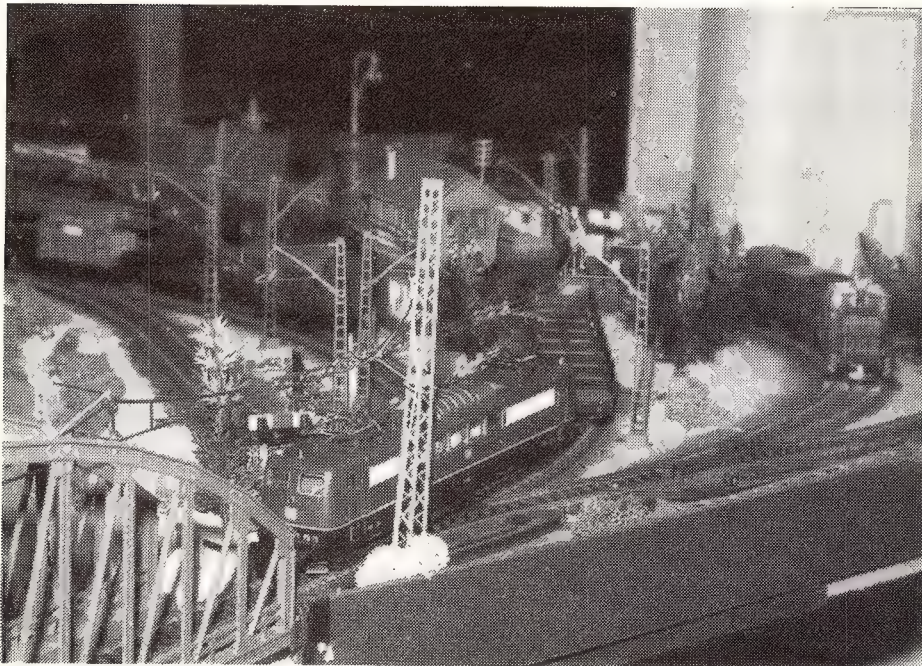
Temporary restrictions may relate to line work or trackwork actually designated for realignment.

Train speeds

Having assessed the physical properties and characteristics of the trackwork and perhaps identified some sensitive areas, it is necessary to establish how well each locomotive runs. Line lengths are known and using either precise calculation or rules of thumb (for HO, 60 mph = 1 ft/sec; 100 kph = $\frac{1}{3}$ m/sec), speeds can be estimated for a range of control settings. The measurements should be made under typical load conditions. On the Lakeland Railway the test load is either five coaches (service range 4 to 7) or twelve long wheelbase four wheelers (service range 4 to 15 or equivalent in other types of wagon). All mixed traffic locos are given both tests. A loco, differently loaded in service, can be run with a slightly varied throttle setting. The test values act as a median guide. The test runs should establish a comfortable operating range for the loco up to its maximum rating, while warm. In service some locos run cold initially which adds to interest since they may sometimes arrive late at

TABLE II-1
LINE SECTIONS — THE LAKELAND RAILWAY

Section	Grade		actual metres	scale km	Length		
	Min %	Max			scale 6:1	false scale	approx km
1: Lakeview branch (to C)	2.0	3.0	9.5	0.83	4.96	4.13	4.0
2: Main 1	1.2	2.5	17.25	1.50	9.00	7.50	7.5
3: Lakeview branch (incl BC)	2.0	3.0	11.50	1.00	6.00	5.00	5.0
4: Portlea branch	0.0	1.4	9.0	0.78	4.70	3.92	4.0
5: Main 2	1.0	2.2	17.15	1.49	8.94	7.50	7.5
6: White Falls entry block	0.5	3.3	2.50	0.22	1.30	1.08	1.0
7: White Falls-Montvale	0.5	1.0	6.00	0.52	3.13	2.61	2.5
8: White Falls-Mountview	0.7	3.3	13.80	1.20	7.20	6.00	6.0



0120: E1: G130, the empty grain wagon service from Portlea to Montvale, augmented on this occasion and with a cl 151 electric, about to cross Portlea bridge. The bridge hinges up to form a clear access way.

the first stop using test settings. Spot checks of the calibration are advisable after maintenance.

All tests are made with fixed throttle, irrespective of grades, on the main oval line sections in order to simulate real operating conditions since a single operator cannot cope with multiple or continuous train adjustments and can literally only 'drive' a train at section junctions, into stations, over sensitive points with a speed limit or marked grade changes. Traffic on the main lines is allowed free control to permit a high density operation and allow the operator scope for specifics elsewhere. Group operators do not need this restriction which may expose loco or layout problems.

Example. Most of my locos will run over all the lines of the layout at scale speeds down to 40-50 kph (using conventional controllers!). How? A combination of light grades and loco attention. But there are problems which would be exacerbated by stiffer grades for some higher-g geared locos which will only run evenly at speeds above 80-90% of scale maxima. There is no difficulty with them if the throttle can be adjusted but as explained above, the combination of single operator and moderate traffic density will not permit this in main line service. There are two alternatives; one, to replace the eight standard controllers with modern electronic types (expensive and not in current plans) or two, pending the first, to run the locos faster than scale. I therefore use an artifice called "false scale/speed" in which all locos are allowed over-the-track maxima 16% higher than true scale. All units are involved in order to maintain relativities. The effect is to increase the 'normal' operating speed range in service under fixed throttle guaranteeing that no loco ever runs near the 'maximum' allowed in general service. All speed calculations, with respect to timetable or clock rate, are then based on distance covered reduced by the same amount (16%). Thus the apparent speed of a train as calculated from the timetable and geography remains the same as for true scale. The distance reduction is included in Tables II-1, II-2, and Lakeland geography is based on the reduced value (Figure II-1). The relationship between true scale and false scale is clarified in Tables II-4, II-5. Table II-4 shows how a train can cover the 'distance' in less time yet still seem to have the true speed and Table II-5 shows how reducing the actual elapsed time increases the apparent flexibility of a loco. This

particular loco has no problem with the true scale requirement but the reduction allowance makes it possible to appear to go slower, as in the second line of Table II-4. Many layouts will need a trick like this when there is only a single operator and especially where grades are steep and controllers old style. Modern controllers or group control avoid this, my only compromise.

Tests on branch lines are based on typical control patterns and do not need the artifice; but it is extended to them for consistency.

The load-speed function

With line section speed/timing data like that of Table II-5, for every loco and section, and a decision on line section speed limits a timetable can be produced. All that is needed is to then allow a time margin for slowings and stops. But in real life there is a complication; what load is consistent with the loco, the line

and the speeds required? On any railway the load hauled by a train will be determined by coupling strength, axle loading, load-length allowed, loco capacity and line grades or restrictions. On our models the first two are irrelevant while the others are noticeable but ignored, as a rule.

On any prototype there are line-load-speed restrictions based on a formulation relating grades, speeds and loco class or power. A loco rated to haul 1200t at 80 kph on the level may only be allowed 800t at 120 kph and perhaps less on certain lines. Few similar, or higher, load figures are in the range of our models. I have accepted figures like these because the heavier grades on model layouts cut these numbers down to size — especially if the railway wishes to run high speed (over 70 kph) services.

Typical graphs (Figure II-2) are provided for two heavy duty top of the range units; one electric — cl 151, one steam — cl 44. The electric has the higher performance of course.

On a model railway it is not always easy to compile a load in excess of 500t (equivalent to 8-12 coaches, 10 large loaded wagons) since length becomes a problem. It is rarely attained with four-wheeler stock. On the Lakeland Railway the heaviest regular train is the loaded unit grain service from Montvale to Portlea (G140). In its basic form it is around 550t plus loco but is occasionally augmented to over 700t. Normally, then, it could be operated by the cl 44 2-10-0 and given a level line it could be run at the loco's maximum speed of 80 kph. But against the average 1.25% grades on the main lines (the branches in this direction have downgrades only) the speed would be down to 60 kph. The electric on the other hand would still be running at up to 120 kph — the stock is rated for 120 kph. Lesser locos may be severely affected.

Goods trains on the spiral to Mountview face peak grades of 3.3%, sustained grades of about 2.5%, and if a fast service is to be run, loads must be cut. Thus for the normal operating speeds demanded by the timetable, there must be a line section-loco load appraisal by loco class. Our cl 44 could take a load of 500t up the spiral at about 30 kph while the electric could do it at 100 kph. If the train is required to average not less than 70 kph then the electric is unaffected but the 2-10-0 is restricted to

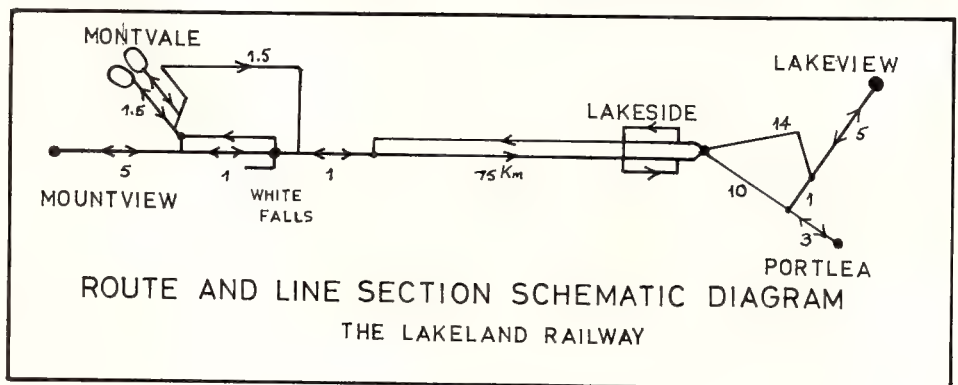


TABLE II-2
ROUTE SECTIONS — THE LAKELAND RAILWAY

Section	Length				
	actual metres	scale km	scale 6:1	false scale	approx km
Lakeview-Lakeside (normal* via line 2)	43.0	3.74	22.45	18.71	19
Lakeview-Lakeside (bypass † via line 1)	36.5	3.18	19.05	15.87	16
Lakeview-Portlea	20.5	1.78	10.70	8.92	9
Lakeside-Portlea	30.5	2.65	15.92	13.27	13
Lakeside-White Falls +	175.0	15.22	91.35	76.13	76
White Falls-Montvale	6.0	0.52	3.13	2.61	2.5
White Falls-Mountview	13.8	1.20	7.20	6.00	6

* includes exactly two laps of the main oval

† includes one completed lap of the oval

+ includes nine completed laps of the oval

**TABLE II-3
EXAMPLES OF SPECIAL LIMITS**

Radius 3 (2110):	60 kph (railcars 75 kph)
Lakeview entry roads, platforms 3, 4:	40 kph
Lakeside junction (C; to down line):	60 kph
(class 03 locos):	50 kph
Yard limit:	45 kph
Portlea bridge:	60 kph
Montvale junction approaches (E):	55 kph
Lakeside, exit from platform 1:	40 kph
White Falls level crossing:	80 kph

**TABLE II-4
TRUE SCALE VERSUS FALSE SCALE**

	Distance km	Real time secs	Clock rate	Clock time mins	Apparent speed kph
True scale	9	60	6:1	6	90 (one lap)
False scale	7.5	60	6:1	6	75
False scale	7.5	50	6:1	5	90

240t all up (including loco). These values begin to fall in the ambit of our models and the impact is far greater on less powerful engines. Apart from fuel supplies this is another reason all goods services to Mountview are now electric-hauled. Appropriate power, large diesel or electric, is also necessary for the 250t passenger trains.

This discussion is very brief but the technique is workable and reflects an aspect of the real world we can copy to provide interest and challenge. The data can be used two ways; to allocate power according to load, line and desired timing factors or to set timing factors for timetabling given the power resources at hand. As the Lakeland Railway now has a mature stud of locos the first is customary but it was not always so. Multiple heading can alter the function but this is generally avoided on the Lakeland Railway.

The operations book may also list downhill restrictions as well. Layouts with level lines will

rarely be able to approach real load figures or even moderate fractions of them but any layout with grades in the range 1-4% can use the real functions to great effect. Note that the graphs include a power rating and are based on simple assumptions of constant power output, constant speed and a median speed drag value. Thus the discussion for say 3% refers to the sustained requirements of the spiral, whereas on the short White Falls pinch only a slight speed drop will be noticed and loads are not really affected.

Section running times

We are now almost ready to compile this mass of miscellaneous rules, observations, specifications and restrictions into a timetable but one more decision must be made. How fast are the trains to run? The loads to be shifted, the motive power on hand and train compositions all affect this and there has to be some margin for error, delay and possible load

or loco changes. I now have the reserve power to avoid some of these factors.

Examples: Train G131, G140; empty/loaded grain service. CI 141 and 151 electric locos are available at Portlea and could be used on this overnight service. The basic load is around 550t and the light electric (141) can get this train to over 100 kph which guarantees a reasonably early arrival at Portlea (the timetable specifies arrival timings for classes A, C). This is preferable since it eases the job of clearing the train before the 706 local arrives from Lakeview. If the train is augmented by 200t (common) then the speed would be 70 kph max. The heavy electric can then be used to maintain the 100 kph speeds. In other cases, lacking loco trade-offs, the train would run slow, and late. This is not unusual.

Train E3181 even when augmented on Wednesdays and with a heavier engine still requires some compensation and six minutes extra are allowed it. The data on Table II-6 are guide specifications for desirable speeds to maintain a massive schedule. Variations occur and while one class A goods may run as specified another might be run 10% slower due to loading and loco usage. The speeds implied and required for keeping time are usually comfortably within the capability of locos normally rostered. Stopping trains need the addition of 1 or 2 minutes to section times to cover accelerations/decelerations.

The timetable

The timetable can now be produced as discussed in Part III. But the inexorable role of the rule book in its preparation will now be obvious. Timetables can be produced with only a charting of train speeds and timings. The other data is necessary if the model railway is to have any semblance of realism or total operation with the timetable placed in perspective. The code book will list the current timetable with a listing of any relevant abbreviations pertinent

**TABLE II-5
TYPICAL LOCO DATA**

Loco 3072: cl. 212: diesel: max. 100 kph: 1350 kW

Mainline test data only:

True scale time limit: 54 seconds minimum

False scale time limit: 45 seconds minimum

Goods test:

Line 1: 90:87; 100:71; 110:56; 120:48; 130:43

Line 2: 90:87; 100:70; 110:55; 120:47; 130:42

100:71 = controller setting: time in seconds for one lap

2100: E1: G149 about to pass through White Falls with a cl 151 electric. On the left is the outlet from Montvale 'goods.' View is from the cliffs above the first turn of the spiral to Mountview.

1932: E1: N4008 entering platform 3 at Lakeview. The more complex entry to this platform requires relatively low speed limits in contrast to platforms 1 and 2. Note the loco waiting spur, one of two at station entry. ▼

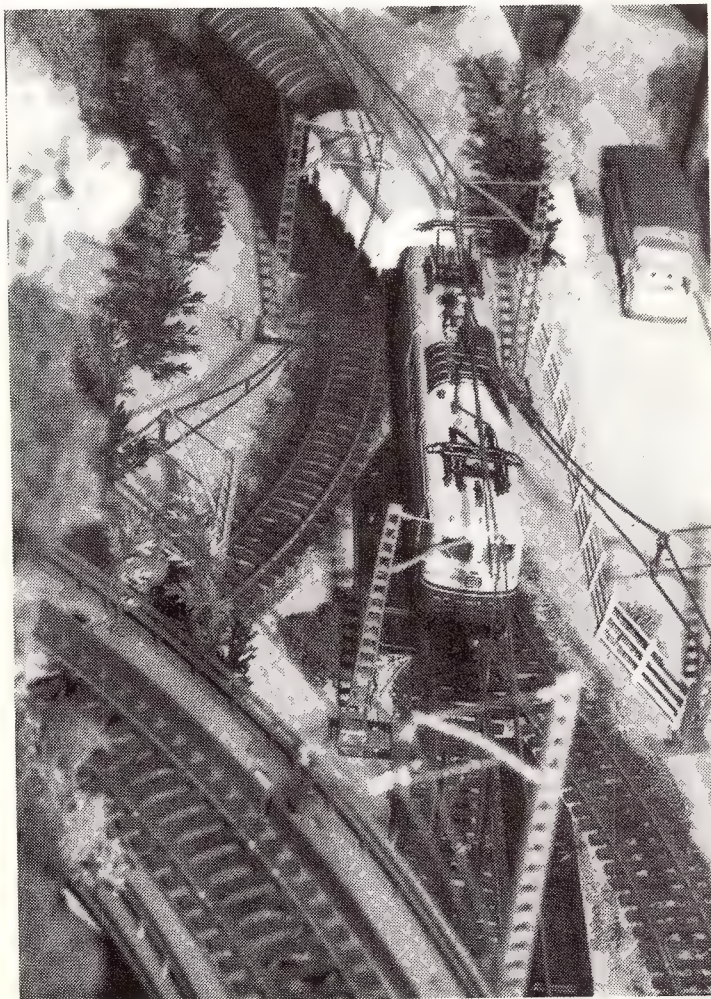


TABLE II-6
SECTION RUNNING ALLOWANCES
(no stop allowances included)

Train classes — GOODS

Section	Limit (kph)	A	B	C
1: Lakeview branch (to C)		5½/53/70	5/60/95	4½/67/100
2: Main (Lakeview/Lakeside)		11½/75/80	9/90/100	7¾/110/120
3: Lakeview branch (incl BC)		6½/50/70	6/60/95	5½/65/100
4: Portlea branch		4½/65/70	4/70/90	3½/80/90
5: Main (Lakeside/White Fs)		60/75/80	50/90/100	41/110/120
6: White Falls entry block		1/60/65	1/60/75	¾/75/80
7: White Falls/Montvale		3/50/70	3/50/80	2½/60/85
8: White Falls/Mountview		6½/55/65	6/60/75	5/70/80
9: Lakeside/Portlea		8/75/80	7/85/100	6/100/120
10: Lakeside/Lakeview via BC		—	—	—

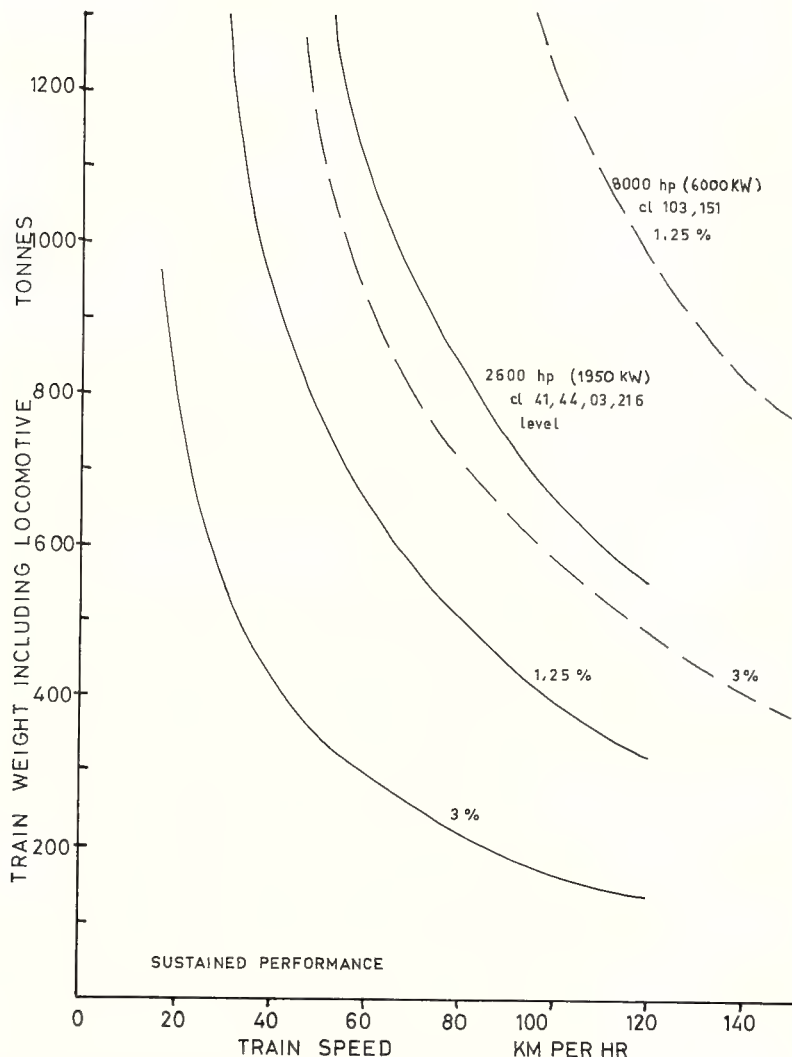
Train classes — PASSENGER

Section	Limit (kph)	A	B	Railcars
1: Lakeview branch (to C)		4/75/110	3½/90/110	4½/67/100
2: Main (Lakeview/Lakeside)		7¾/110/140	6/140/200	8½/95/100
3: Lakeview branch (incl BC)		5/75/110	4½/85/110	5½/65/100
4: Portlea branch		3/90/110	3/90/110	4/70/100
5: Main (Lakeside/White Fs)		40/110/140	31/140/200	48/92/100
6: White Falls entry block		¾/80/90	¾/85/100	1/60/75
7: White Falls/Montvale		2½/60/110	2/75/110	3/55/100
8: White Falls/Mountview		4½/80/90	4/90/100	4½/80/85
9: Lakeside/Portlea		5½/110/140	4½/130/200	6½/92/100
10: Lakeside/Lakeview via BC		6½/100/140	—	7/94/100

Notes:

40/110/140 = section time in minutes/implicit average speed/section speed limit for train class
Trains between Lakeview and Portlea use sections 3 + 4.

Only certain local services use the alternative route between Lakeview and Lakeside (section 10).
Stop allowances of one or two minutes should be added for each end station and all intermediate stops. Certain expresses may not be allowed this margin and higher speeds are demanded.



to its interpretation. The timetable is the most visible part of railway operation.

Conclusion

The first two parts of this series were intended to show what can be done to bring your railway to life by examining factors in operating codes. The timetable integrates the technical data into a working railway and, with the timetable, purposes for the railway in a "country" take precedence and shape. The timetable and its actual working demands, with translation to operator guide, will be discussed in the final two parts.

Timetabling of the Lakeland Railway has been developed concurrently with layout development and stock acquisition, having been based originally only on tenets of time, distance, obvious limitations and traffic mixes. With time and experience other constraints like load and composition rules and appropriate loco allocations have led to a full operation increasingly based on German Federal Railways (DB) rules. The satisfaction and realism introduced have been well worth the effort taken to study the prototype.

DRILLING A TRULY SQUARE HOLE

Actually, I cannot tell you how to drill a square hole. I can tell how to overcome some of the problems in drilling holes that are truly square to the face of the material. First, though, I must say that you have about as much chance of drilling such holes with a hand drill (either a hand or power drill) as swimming Bass Strait. Experienced machinists know this — that is why they just don't drill holes that way.

For small jobs, the trick is to drill the hole using a machine tool called a 'drill press'. A drill press is a floor — or bench mounted drill with a work-table whose surface is square to the drill chuck. Although the table height on some drill presses is adjustable, the table remains at right angles to the drill chuck. Any work piece set up properly on the table will be drilled squarely. Very few modellers own drill presses, but practically every engineering works, every technical school, and most automotive workshops have them. Where you need square accurate drilling, ask around. Or shell out \$200 plus for your own press.

The moment of truth comes when you need to drill a truly square hole through a piece of material that is too big for a drill press. In my case, the material was a large piece of chip-board for a turntable base. The problem was solved in this way:

A thick block of wood was clamped in a drill press (at a local garage) and drilled through with the drill to be used for the chipboard.

This block was taken home and secured to the chipboard. It then formed a guide for a careful drilling of the chipboard.

When the block was removed and the turntable mechanism assembled, the turntable bridge rotated at a uniform height from the chipboard. It took only a few minutes to drill that hole right — but it took a lot longer to work out how to do it.

Vin Smart

**N.S.W. VEHICLE
COUNTDOWN — 21**

In 1955, the N.S.W.G.R. had 34 'Z' class bogie bolstered flat wagons on its register. Today, only 7 vehicles of this type remain on the N.S.W.P.T.C. books. All are on long-term lease to Australian Iron and Steel, Port Kembla.

Paul Rogers

THE 'HUB' CARS

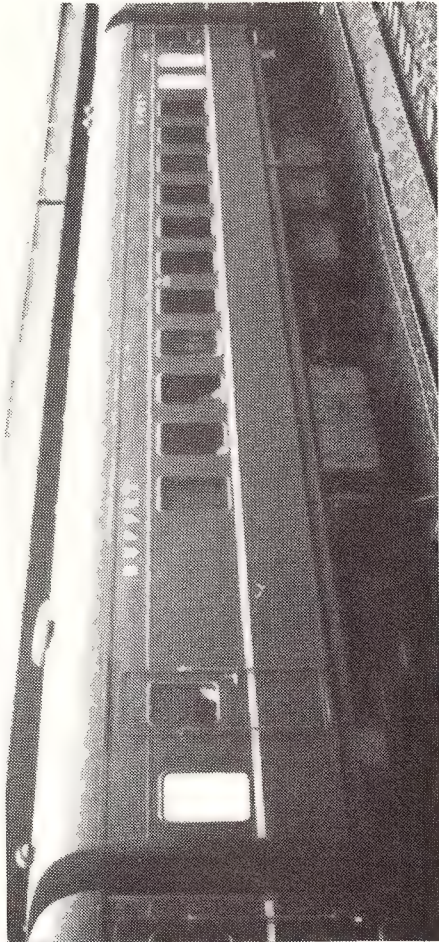
Part 2 – RBH, RFH and HFH Cars

Article: Paul Rogers
Plans: Roger Johnson
Photographs: Bob Gallagher

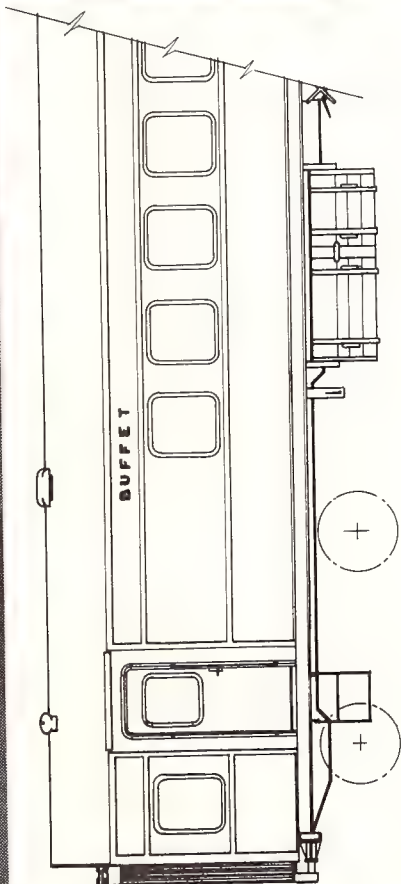
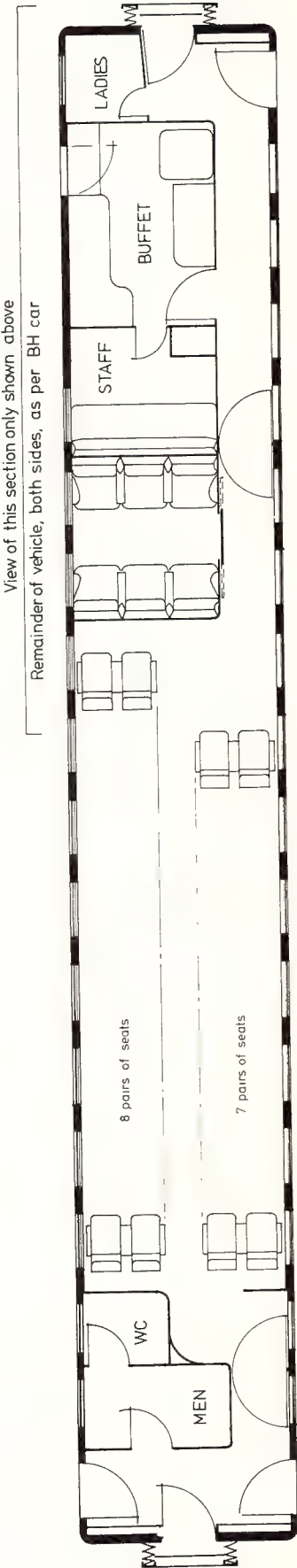
Rolling Stock (Continued)
d. RBH Cars

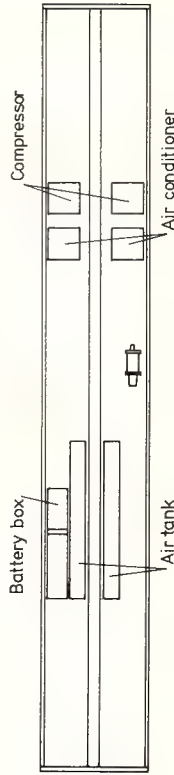
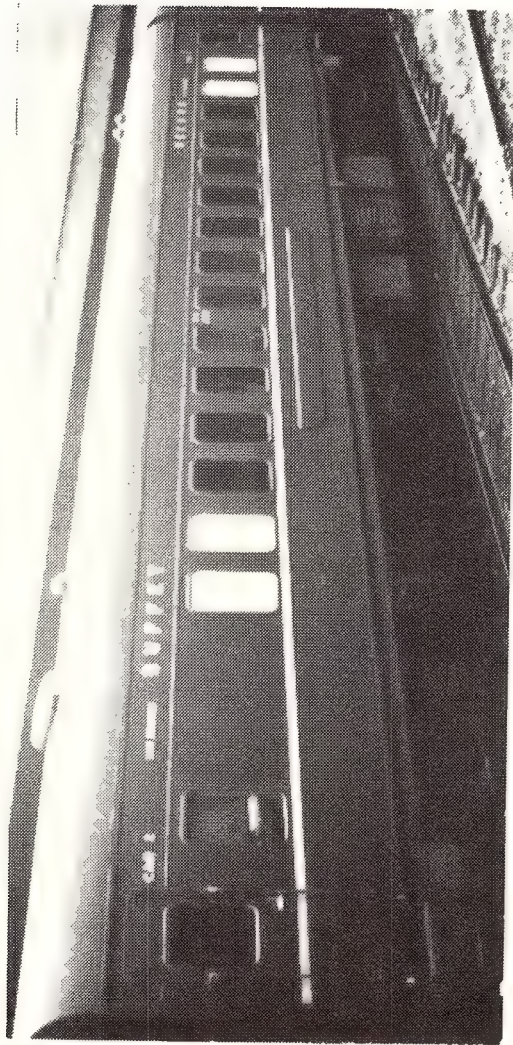
Originally, 8 first class buffet cars were planned, but only 4 carriages of this type were constructed, the remaining vehicles for which orders had been placed appearing as second class units. The RBH cars differ from the other types of intermediate vehicles in 'HUB' sets by having side doors at only three corners and by the inclusion of a compartment in the design. Completion dates were: RBH.2236 – 7/1947; RBH.2237 – 7/1948; RBH.2238 – 1/1949; RBH.2239 – 5/1949. Car 2238 was internally refurbished to 'day-niter' buffet car status in December 1975; and car 2237 followed suit in July 1976. The release of these vehicles for refurbishment was made possible by the withdrawal of buffet facilities from the 'HUB' sets assigned to intercity workings between Sydney and Newcastle. Each RBH car tares around 44 tonnes and is load rated for 46 tonnes.

The RBH car consists of a central saloon seating 30 passengers, flanked by a 6-person cabin, buffet and staff compartments, and toilet/washroom facilities. The total capacity of 36 passengers is 7 people more than the vehicle's original complement; like the BH cars, the RBH type units had four-across seating installed during the early 1960s. The 6-passenger compartment is similar in design and appointments to those in non-air conditioned corridor cars. A

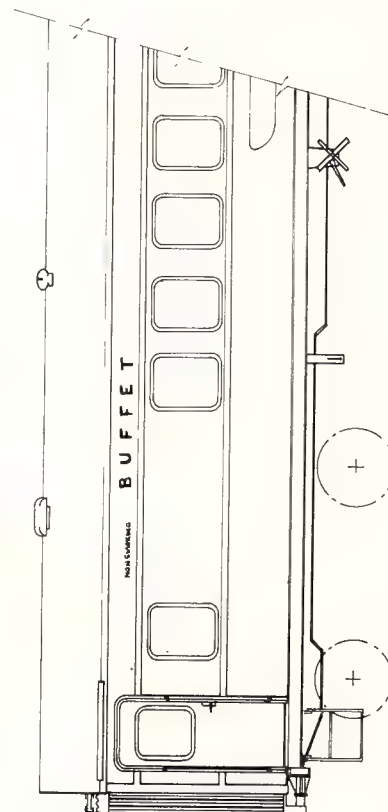
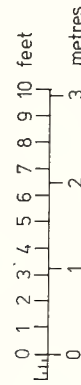


RBH
1st Class Buffet Car
HUB Set

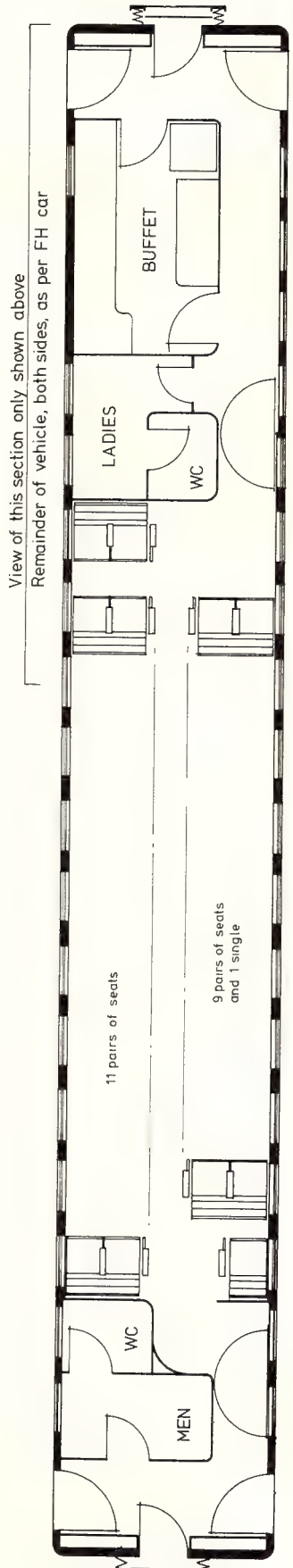




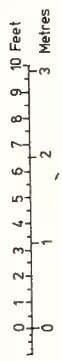
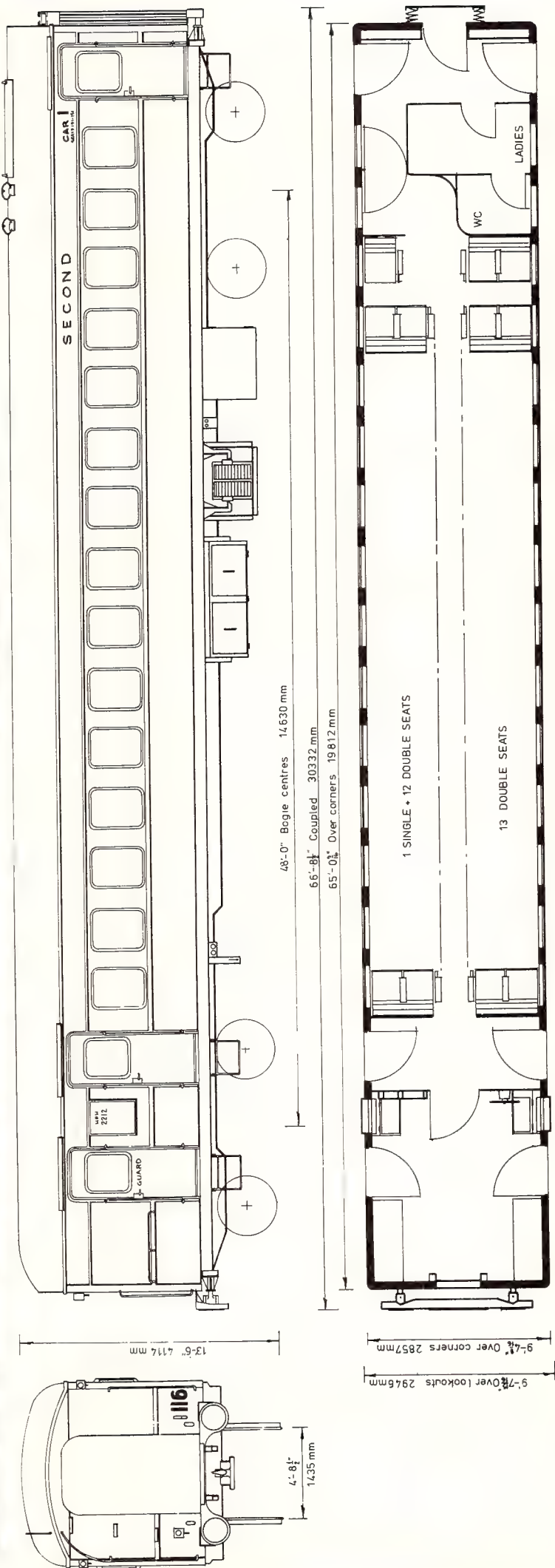
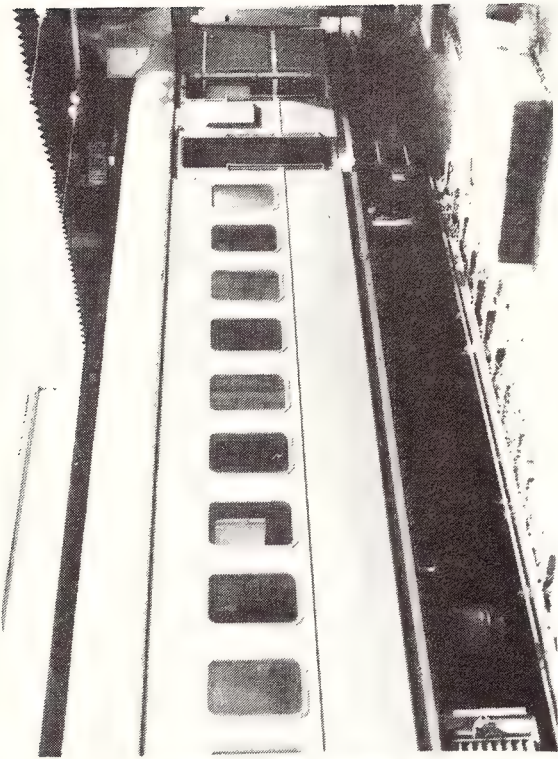
RFH Underframe Details



PARTIAL VIEW OF BUFFET SECTION



RFH
2nd Class Buffet Car
HUB Set



HFH
2nd Class Terminal Car
HUB Set

door at each end of the RBH car provides covered access to adjacent rolling stock.

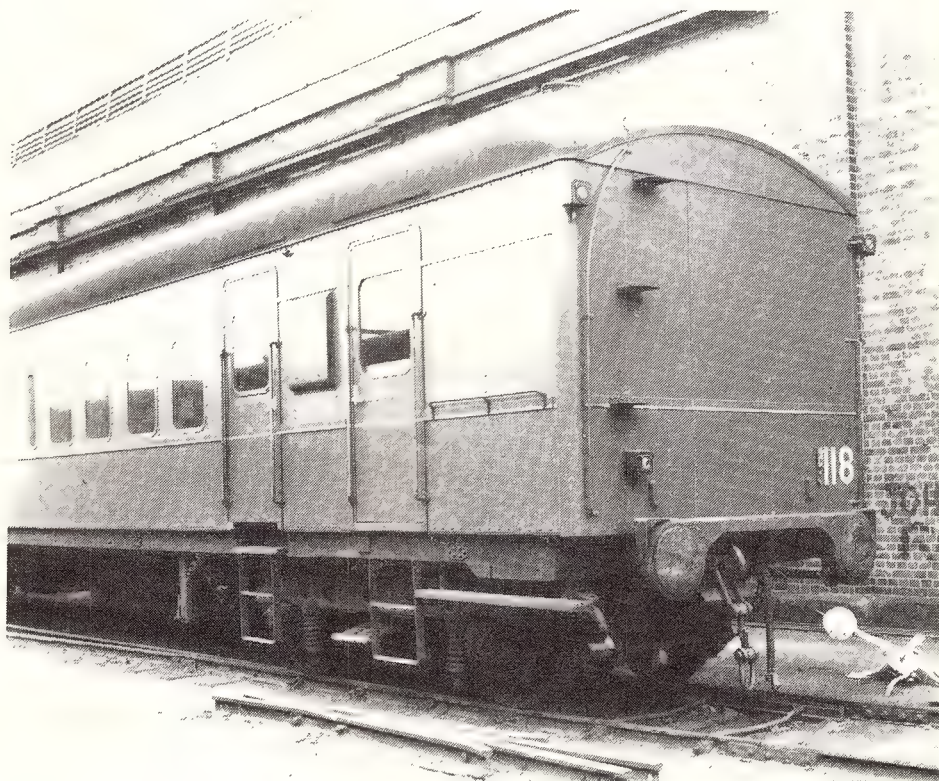
e. RFH Cars

Like the PFH cars, the RFH design was not an originally proposed coding. The four second (later economy) class buffet cars built for service in the 'HUB' sets were made available for traffic as follows: RFH.2232 — 8/1947; RFH.2233 — 5/1948; RFH.2234 — 10/1948; RFH.2235 — 8/1949. Cars 2233 and 2235 were modified to 'day-niter' buffet cars in December 1975; car 2232 was treated in this manner during July 1976. Like the RBH cars, the refurbished RFH units had become generally surplus to requirements after the abolition of refreshment services on Sydney-Newcastle expresses. Each RFH car tares 42 tonnes and has a gross mass of 45 tonnes.

The RFH car comprises a central saloon accommodating 41 passengers, and a toilet/washroom and entrance vestibule at each end of the vehicle. A door at each corner of the coach provides access to and from the platform. Doors at each end of the RFH car provide covered access to other cars in the train.

f. HFH Cars

The standard economy class terminal car in the 'HUB' set, the HFH unit, masses 40 tonnes (empty) and 44 tonnes (loaded). Seating for 51 passengers is provided in a large saloon which is flanked at the inner end of the vehicle by a toilet/washroom and entrance vestibule. The outer end of the HFH car contains a guard's compartment and space for luggage. At this end of the vehicle, separate doors exist for passengers and staff, while the bulkhead dividing the saloon from the logistics area is fitted with a door for use by railway personnel.



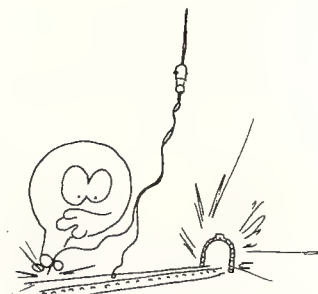
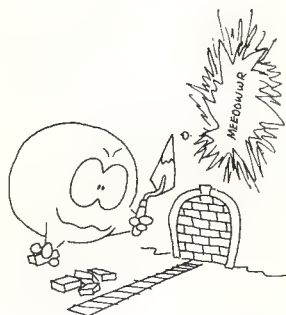
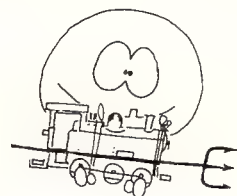
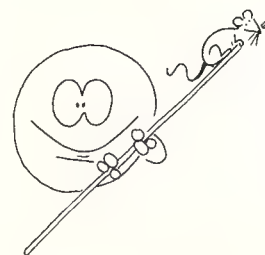
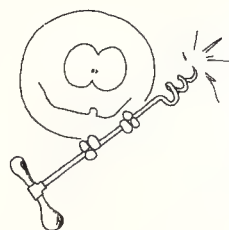
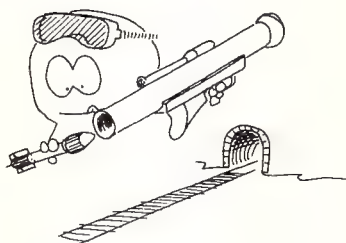
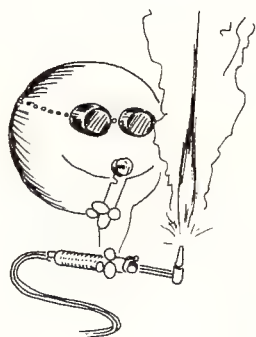
Part 1 of the HUB Cars was published in the March/April 1981 issue.

(to be concluded)

Part 3 of the HUB Cars will include details of the 'RDH' car as converted from RBH and RFH cars.

FELINE IN THE TUNNEL

Dick Stein makes a few suggestions for removing the household cat from within the scenery.



Right: Waterfall yard hut in HO scale. The model is mounted on a small section of scenery. Allan Brown photograph.

WATERFALL YARD HUT

Ron Cunningham describes the construction of a characteristic railway structure.

The prototype for the model described in this article is to be found in Waterfall yard, which is a station and yard located on the Illawarra line to the south of Sydney.

Intended originally as a staging yard for smaller loads brought up from the south coast, deviations and regrading later reduced this function but the existence of a colliery nearby led to Waterfall being used as the staging point for the mine's output of loco coal.

Full loads were worked from the colliery to Waterfall where the wagons were weighed and stored for dispatch to various loco depots.

The need to weigh the loads necessitated a weighbridge and today's rundown hut was, in its bygone days of glory, the weighbridge hut complete with coal fire for protection of railway workers from the cold winter nights — electricity not being added until much later.

Today the weighbridge is not used and the hut, although not quite derelict, is in a

delapidated state. It appears now to serve as a general ablutions facility for railway workers and, with blackberry bushes running riot, the hut has very much merged into the landscape.

All this, to me, added up to a hut which radiates character and I determined to build it almost immediately upon discovering it.

It is the type of model which takes almost no space on the layout but adds loads of character, so get out your modelling gear and let's get started.

The prototype hut has two different types of siding. The front, rear and the side wall with chimney are constructed of regular weatherboard, but the side with the door entrance had splayed weatherboard (or "clapboard" in American parlance). Why this is I don't know. Perhaps the door side wall was altered at some time during the hut's career.

Both types of siding are available from Northeastern so I decided to follow the proto-

type and use the different types, but you can please yourself on this aspect.

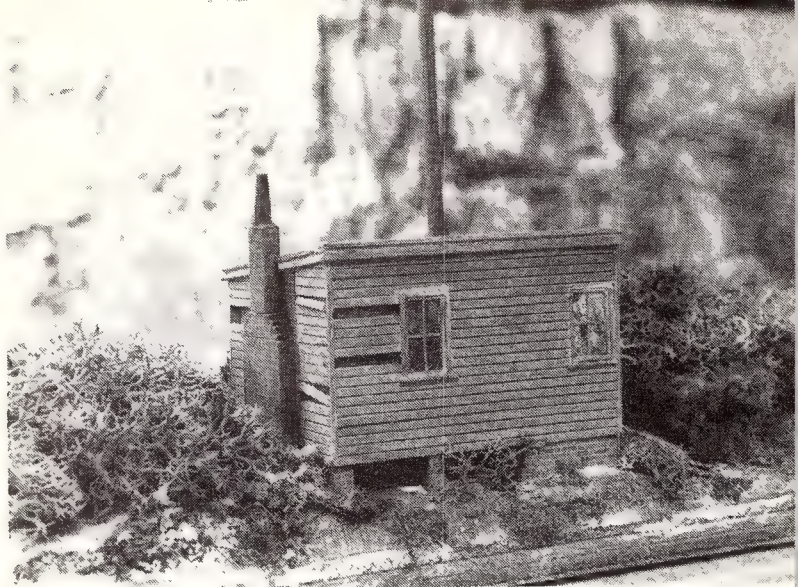
The Northeastern sheet to use is the one with 1/16" spaced scribed lines. This represents 5½" to 6" boards. Similarly, the clapboard siding to use is the sheet with 1/16" lap spacing.

Start by laying out the four sides of the hut on the plain side of the scribed sheet timber.

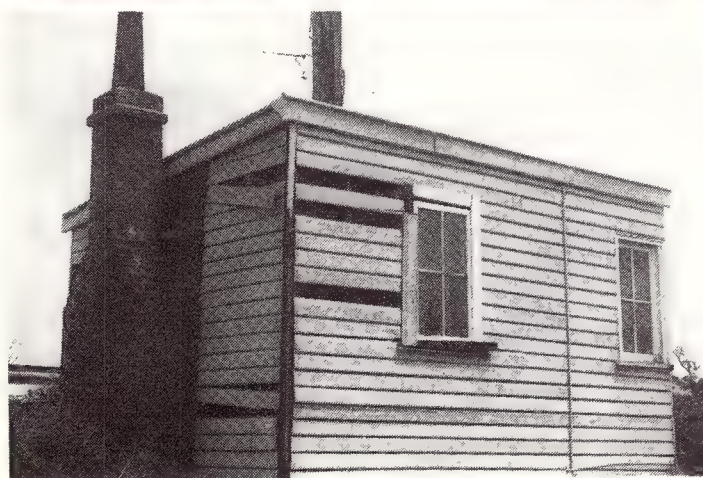
Mark in the door and window openings as per the dimensions shown in Diag. 1.

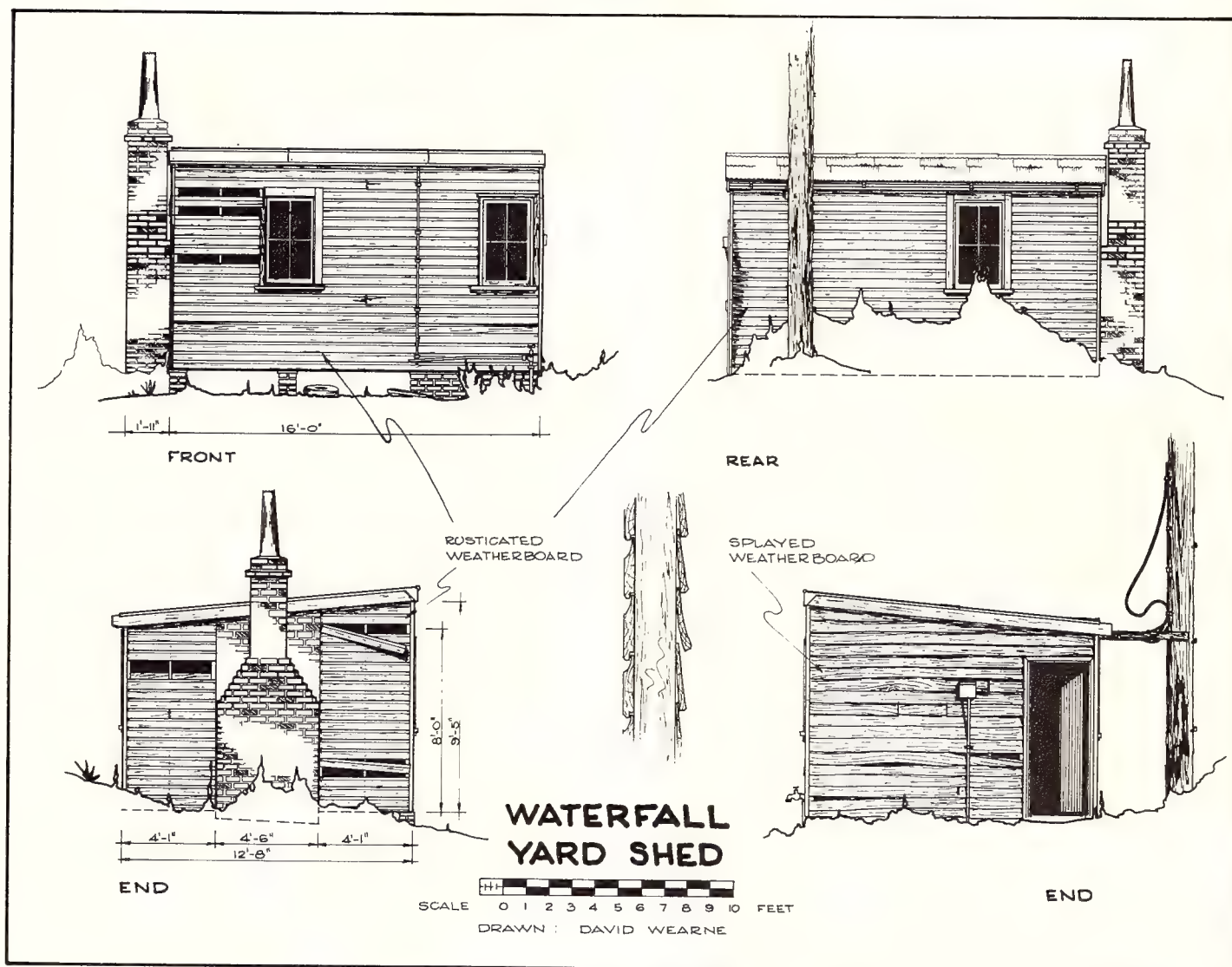
Note that the left hand side of the hut has its centre one third taken up with the brick chimney. This effect is best achieved by cutting out a complete side from the Northeastern sheet and then removing the desired centre portion. Do not discard the centre portion as it will be covered with brickpaper to represent the chimney.

Once all the dimensions are laid out on the sheet timber use a sharp knife and a steel



The four photographs below illustrate the weighbridge hut at Waterfall a couple of years before demolition. Note the loose wall boards.





straight edge to cut out the pieces. Remove the window openings first as the sides are more manageable whilst still part of the larger timber sheet. A knife of the snap-off blade type is the best to use as it allows a sharp point to be maintained. I have found that I use a full blade even on small projects such as this. At about 10c a blade this is not a problem and I regard these knives as one of the better modeller's aides introduced over the past few years.

Once the sides have been cut out start with the chimney wall.

Take up the centre piece. This is to be covered with brickpaper and glued in position to represent the brick fireplace wall. Against this will be placed the actual chimney.

There are many brands of brickpaper available on the market and over the years I think I have purchased all of them. They range from locally produced examples with 12" long bricks to the two excellent varieties which I eventually found and now use almost exclusively when brickwork is needed.

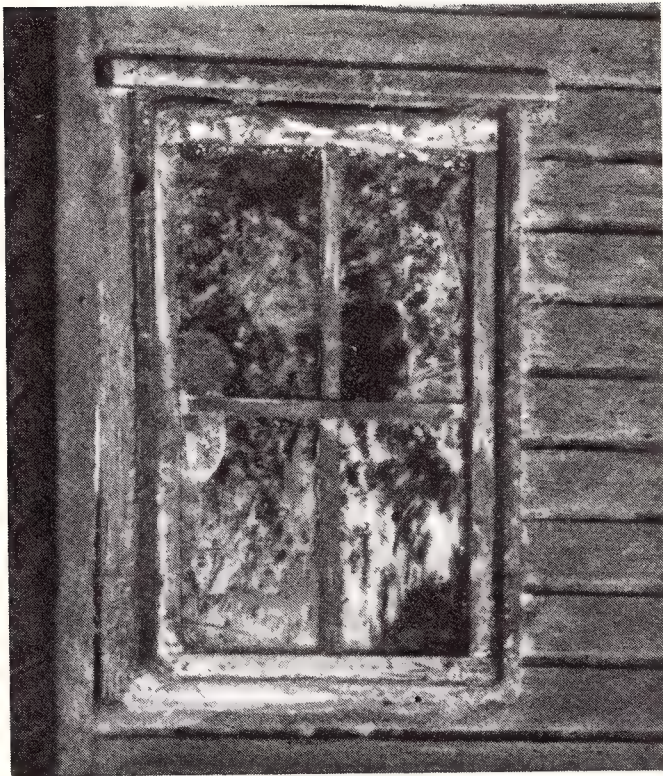
The two that I highly recommend are Superquick and Prototype Models, both of which I purchased from Keith Hudson's some years ago and have been using ever since.

Whichever make you decide to use, the method is the same. Glue a piece of brickpaper to the centre of the wall, making sure to wrap the paper around the sides of the timber piece to avoid peeling or showing any of the timber. The type of glue used is important as bubbling in the paper must be avoided. I used Selleys white glue and gave both paper and timber a thin, even coat.

Once the brickpaper is dry the three pieces of the wall can be glued back together.



This close-up view of the completed model illustrates some of the detail the author put into a simple building. Loose and missing wall boards give the impression of dereliction. Jack Parker photo.



The above photograph illustrates some of the realistic grime the author managed to add to his model in the weathering process.

The photo to the right shows the rear view and the door entry. Note the 'curl' on the ends of the roofing iron. Both photos by Jack Parker.



To do this cut a suitable backing piece from either timber or styrene sheet of approximately the same dimensions as the wall less about 1 ft all round. Here I used some scrap offcuts of Gordon Duncan's 3 ply. This material never warps and so is excellent for use as a backing medium.

Before gluing the three pieces to the ply, test the reconstructed wall against the dimensions of the opposite wall. It may be necessary to file away a fraction of the new wall because the brickpaper has expanded the width of the wall.

Once the sides are correct glue the three pieces to the backing piece.

When dry you can then, if you wish, proceed to age the hut by cutting out a board here and there. Reglue some at odd angles and discard others altogether. You can please yourself how much or how little of this you wish to do. The ply backing will now serve the added function of appearing as the inside wall panelling.

Now turn to the front and rear walls.

The only work to be done here apart from removing a few boards is the installation of the windows. The method for fabricating the windows is basically the same for front and back so I will describe one window in detail and then you can repeat the process on the front of the hut (or on any other model you might wish to build).

Take up the rear wall and, if not already done, clean up the window opening with a needle file. The opening should be as square as possible although this is not absolutely critical.

Once you are satisfied with the opening reinforce the wall with the same material you used on the chimney wall. Again leave about a foot clear from the edge of the wall. Cut a hole in the backing material slightly larger than the window opening.

The actual construction of the window can now begin.

The main material used for the window is styrene strip. This is available in a wide range of sizes from Evergreen Scale Models. The only source I am aware of in Australia is McBee's Hobby Centre in Victoria. (Their mail

order service is excellent.) The sizes needed are 1"x2", 1"x3" and to a lesser degree 2"x6". (A small amount of 20 thou styrene sheets can be used in place of the 2x6.)

Start first with the 2x6 or 20 thou styrene. Cut a piece 3ft long by around 6" wide. This is to become the window sill. Cut a small piece about 4"x3" from the corners of the strip. The aim is to have this strip fit into the window opening so that it lies flat and protrudes out from the wall to represent the sill. See diagram 2.

Next cut two 3'10" lengths of 3x1 strip. These are to be glued vertically onto the wall to represent the vertical surrounds of the window. A 2'10" length of 1x2 will be glued across the top of the opening to complete the surrounds of the window but first the relationship of the actual window size to the opening already cut should be explained.

The vertical 3x1 strips should be placed so that they slightly protrude out over the window opening. This is done so that the window itself will sit in behind the window surrounds. This overhang is only about one scale inch on each side. The distance between the vertical boards should be 2'4". This is why the opening was cut to a width of 2'6".

When locating the vertical boards care should be taken to ensure that they are in fact vertical.

Once the surrounds and sill are in place turn to the window itself.

Cut a piece of clear acetate from an old shirt box (if you can find one, that is, otherwise clear acetate is available from most hobby shops) to fit snugly into the window opening. This will be the window glass.

Cut two 2'6" lengths of 1x2 strip and with the acetate in place glue these strips across the top and bottom of the window.

Next cut two 3'6" lengths of 1x2 strip and glue a strip to each side of the acetate to represent the vertical sides of the window. As previously explained these verticals should sit about 1" in behind the vertical board surrounds. This allows about a 1" strip to remain visible. These measurements do not have to be

exact.

The cross strips which divide the window into four panes can now be added. These are made from Letraset lining tape. (1/64 x 650 White Glossy). Lay strips of the tape vertically and horizontally on the window to divide it into four, trim the tape to size and press onto the acetate to let the adhesive on the tape grip. Don't worry about the overlap of the tape as it is not noticeable at normal viewing distance.

The window is now complete.

Repeat this process for the front left-hand window.

The right-hand window is slightly different in that it has no board surrounds. Instead there are boards fitted side-on inside the window opening. These can be represented by 1x3 strips glued side-on and the window constructed as in the other two windows.

With the windows complete the four walls can be assembled.

Glue 3x3 corner posts to each end of the front and rear walls. These posts should be trimmed flush with the top and bottom of the walls.

You can now glue the four walls together making sure as you do to keep the walls vertical and the hut square.

Over the years one builds up a collection of glues which are used in different circumstances. One which I discovered recently is a contact glue by Norton called Aqua-tac. This is a quick-drying, water-soluble contact adhesive which allows plenty of time to make final adjustments and any excess can be removed easily with water.

When the four walls are together add the fascia boards. They are 6x2 strips. (Timber or styrene.) Add the front board first, cutting it a little over length at 16'6" and trimming it after adding the side boards.

The boards are glued flush with the top of the walls. Add the side boards, cutting them so that they protrude 6" out from the rear wall.

Whilst the facias are drying add the side door. Fabricate the door surrounds from 1x3 styrene strip and fix in position. The door itself is made from Northeastern scribed siding with

4½" spacing. Nothing fancy about this door as it is to be fixed in a half open position and is therefore largely unseen. A more detailed door could be fabricated from styrene if a competition model is being built.

Now for the roof.

From scrap timber (3/16" balsa will do) cut a piece to sit snugly inside the top of the walls. Turn the hut upside down on a flat surface and glue this piece of timber to the inside of the four walls, flush with the tops of the fascia boards. This will act as a base on which to lay the corrugated iron roof.

The rear wall gutter should now be glued in place. Guttering is always a problem and I normally use a piece of Northeastern timber channel. On this model I used a length of styrene rod which I think turned out well. I would like to hear from anyone who has a better method for simulating guttering for use on future modelling projects.

The roof is made from individually cut and glued sheets of corrugated iron. I use Gordon Duncan's material (see the add in this issue) and although I have mentioned it before I will do so again because it is still the best available.

Cut about a dozen 7'x3' sheets and, using a contact adhesive such as Aqua-tac, fix the sheets in place. Bend the end sheets over slightly to fold down onto the side fascia boards. Don't forget the front row of sheets should overlap the rear row slightly.

Add the front capping board when the sheets are dry. This is a minor departure from the prototype but is a much easier way of doing it. Use a 10x2 timber or styrene strip.

The hut is now basically complete with only the chimney, foundations and minor details to be added.

The chimney is made from a piece of timber cut to the shape and size of the chimney as per the plan. This is then covered with similar brick paper to that used on the wall.

RECORD IT NOW

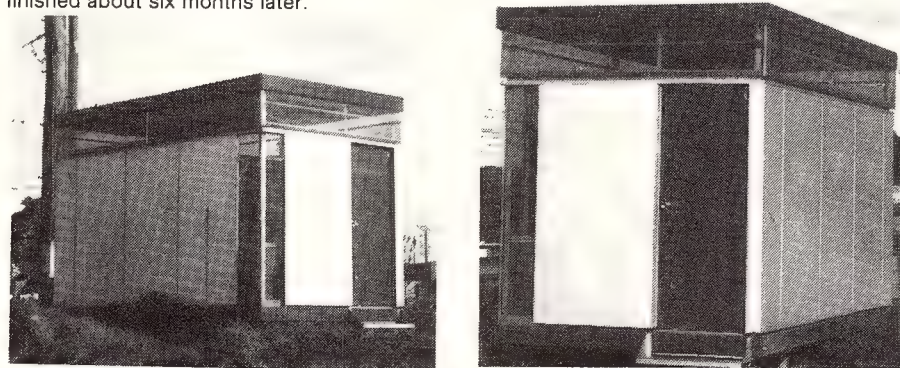
It has been emphasised often in this magazine, both in articles and through editorial comment, of the importance of recording **now** items on the railway scene which may be of interest to the modeller or general railway historian.

The elimination of the last remains of the steam era, mainline upgrading, CTC installation, mineral developments, branch closures, electrification and rollingstock replacement programs are all resulting in the disappearance of much of the railways' older physical assets.

This process is happening in differing degrees on all the state systems and is removing the primary source of information for the period modeller.

For a concrete example (or should I say a glass and sheetmetal example) of what can happen, take the case of the Waterfall yard hut construction article which appears in this issue.

I first measured and photographed the hut about three years ago but it was not until early 1980 that the model was completed. Work on the article commenced immediately and it was finished about six months later.

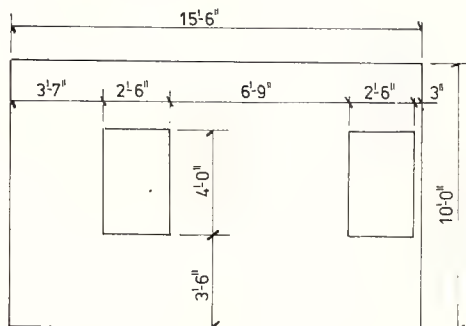


I knew that I wanted some better photographs for the article, so on completion of the text I set out with camera in hand for Waterfall, which is about a half-hour drive along the Illawarra from my home in the southern suburbs of Sydney. I had been to Waterfall about two months earlier to check some dimensions and so was quite surprised when, on arriving at Waterfall, I found that the hut had gone.

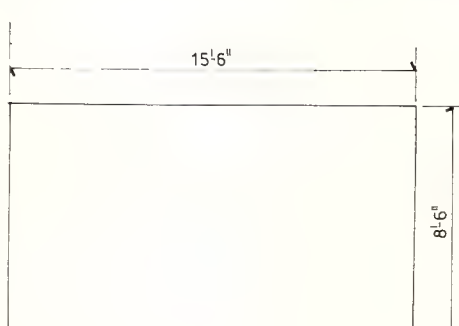
The reason was simple enough. Electrification of the line to Waterfall and later on as far as Wollongong was proceeding and in the re-arrangement of Waterfall yard the hut had been demolished and replaced with a modern glass and sheetmetal version as shown in the accompanying photographs.

Fortunately, in this case I had all the details and sufficient reasonable photographs to finish the article, but the lesson is clear to all modellers, collect those details now before it is too late.

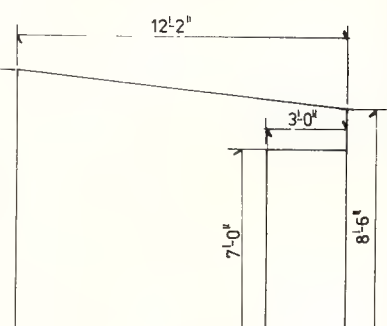
As an afterthought, I wonder if in fifty years modellers will be photographing the glass and sheetmetal box which is now the Waterfall yard hut.



FRONT



REAR

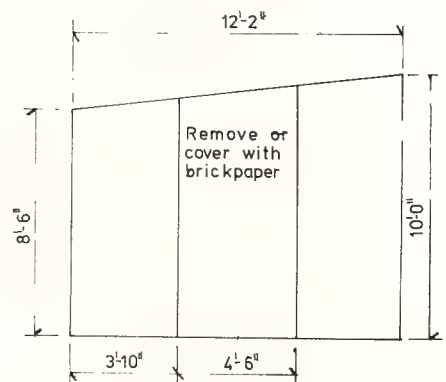
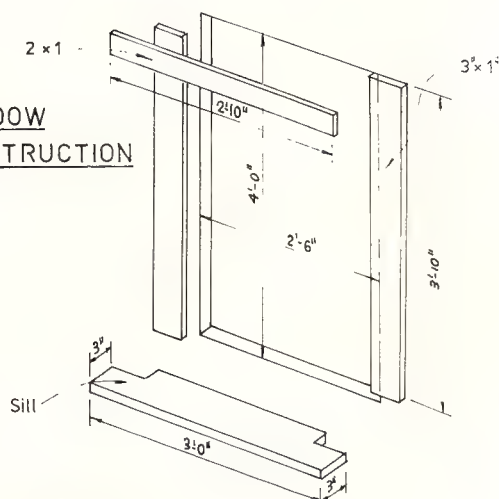


DOOR SIDE

①

②

WINDOW CONSTRUCTION



CHIMNEY SIDE

This part is a bit fiddly but is worth the effort. I reduced the number of steps in the chimney neck to four to make it easier. One mistake I did make was to construct the top of the chimney the same thickness as its base. This results in the chimney neck fouling the roof so be sure to allow for this by making the neck a little narrower than its base.

The chimney stack caused me a few problems until, whilst pondering the problem, I noticed my wife Jennifer knitting across the room. In a flash I had seized a suitable size needle, cut the top off and installed it atop the chimney (after promising to replace the needle several times over, that is).

Glue the finished chimney to the side of the wall.

The foundations are straightforward and need to be varied to suit the site you have in mind for the hut.

The piers are cut from timber, covered with brickpaper and glued in place. At this stage I would prepare the base for the hut and glue the hut in place.

The concrete slab by the door can be represented by a flat piece of timber painted a suitable colour.

The electrical box on the side wall is a piece of scrap timber with a length of styrene rod (or wire) attached to represent the conduit.

The power pole is a length of $\frac{1}{8}$ dowel about 30' long, sanded slightly towards the top to give a slight taper. A piece of 3x1 timber and some wire complete the power connections between the hut and power pole.

The hut is now ready for painting.

Start with the windows and paint the timber parts an off-grey. The hut has not been painted in many years so the aim is to capture this neglected look.

The timber walls are best stained with thin washes of grey and brown. This is a method I use on most of the timber buildings I construct. It involves mixing the desired colour from Humbrol paints on a suitable flat surface, breaking this down with thinners and then wiping this onto the timber walls.

By using very thin washes you can gradually build up to the aged colour you want without obliterating the timber grain and detail with coats of paint.

The roof is painted a mixture of brown and rust red.

Darken the brickpaper with a thin wash of brown to age the look of the bricks and give the pole a thin wash of grey.

This just about completes the model. Add scenery, photograph for this magazine, install on the layout and the hut is ready to provide shelter from the elements for the workers on your railway.

(Regrettably, some 6 months after this article was prepared the hut was demolished and replaced by a new structure in conjunction with Sydney's electrification project to Waterfall. Thus another part of history has gone forever. Ed.)

BINDERS FOR AMRM

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Please send cheques payable to Eastern Division, SCMRA to P.O. Box 317, Epping, NSW, 2121. Please allow four weeks for delivery.

MODELLING PROJECT

S Truck to Shunters' Truck

Gregory D. Young kitbashes a TRAX S Truck into a shunter's wagon



7317 shunts Taree yard in January 1981, using a modified 'S' wagon as a shunters' truck, L 579. Bob Gallagher Photo.

In the beginning N.S.W. coupling was by means of three link couplings with side chains. This was changed to screw couplings on passenger stock about 1865, while three link couplings predominated on goods stock. This remained the case until the 20's when automatic type couplings were introduced to goods stock. However, the change was not pushed and it was not until the late 70's that the hook type coupling and side buffers were abolished.

However it became necessary, in the main shunting yards, to quite often shunt wagons with automatic couplings but without buffers, and as a majority of shunting locomotives were fitted with hook draw gear and buffers, a truck was needed to bridge the incompatibility of the two coupling standards. Thus the shunters' truck was born, invariably based on an 'S' truck.

The model:

Materials:

TRAX 'S' truck kit
North Eastern stripwood
St. George buffers
Brass rod
Kadee couplings
Prototype brake cylinder
Sentinel wheels
block of scrap timber 4" x 2" or similar

Tools:

Zona Saw (or similar razor saw)
X acto knife or similar
No. 56 drill and Pin vise
Flat needle file
MEK
Super Glue

Construction:

1. Cut sides and ends from sprue.
2. Clean up with knife and files.

3. Place side on wood block so that the door is facing up. The object is to completely remove the door.
4. Using the razor saw make a cut on either side of each door, right through until the blade reaches the wooden block.
5. Invert the side into a vertical but upside-down position and, with a sharp knife, slowly cut lengthways between the two pre-cut lines. Continue to test door for strength until it can be safely snapped off.
6. Place the side back on the wooden block and file what remains of the door bottom. This should result in the opening being flush with the timber decking when that is inserted.
7. Assemble kit as per instructions.
8. Cut two planks from the stripwood $1\frac{1}{8}$ " long.
9. Glue to top of axleboxes, with equi-distant overhang. These are the shunters' steps.
10. Drill No. 56 in centre of opening (ex-door) and 9 scale inches in from edge. This is the location for the grab poles.
11. Cut brass rod so that, when inserted in holes, it equals the height of the wagon sides. Glue rod in place.

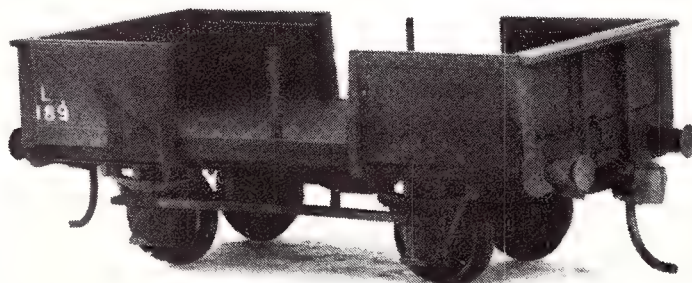
Numbers:

I do not know a suitable number for these wagons but would suggest a three figure number with an L prefix.

Colours:

The colour for a shunters' truck would be weathered black; say a medium gray.

Modellers can super-detail this wagon no end, by adding chains, links and assorted tool boxes to the deck of it. Perhaps even a shunter! All in all it is a relatively easy kit for conversion.



The VicRail 'ELX' Bogie Open Wagon

Featuring the flat sided style of ELX and the various modifications

The VicRail ELX (and relettered codes) bogie wagons can be divided into two distinct groups; those with plain sides and those with corrugated sides and doors. This article will concentrate on the plain sided version leaving

Peter J. Vincent

the corrugated types for the next article.

The plain sided ELX wagons were introduced to service in 1961 and were the first

bogie open wagons built new since the last 'E' wagon was issued to traffic on the 16-7-1928. The previous bogie open wagons in service on VicRail are shown in Table I with their codes, number groups and capacity.



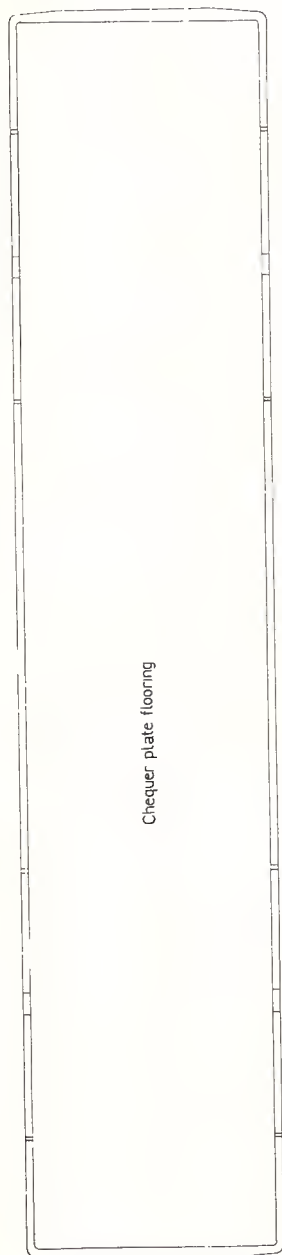
ELX 44 showing the No. 1 side. Photo at South Dynon, 15-9-75.



ELX 44, Side 1 taken at a perpendicular angle (90°). Recorded at South Dynon, 15-9-75. By recording the same side on two photos: one at 90° view and another at an angle of between 40° and 80°, a stereo picture results. By comparing these two photos, details can be discerned that may not be apparent in one single picture.

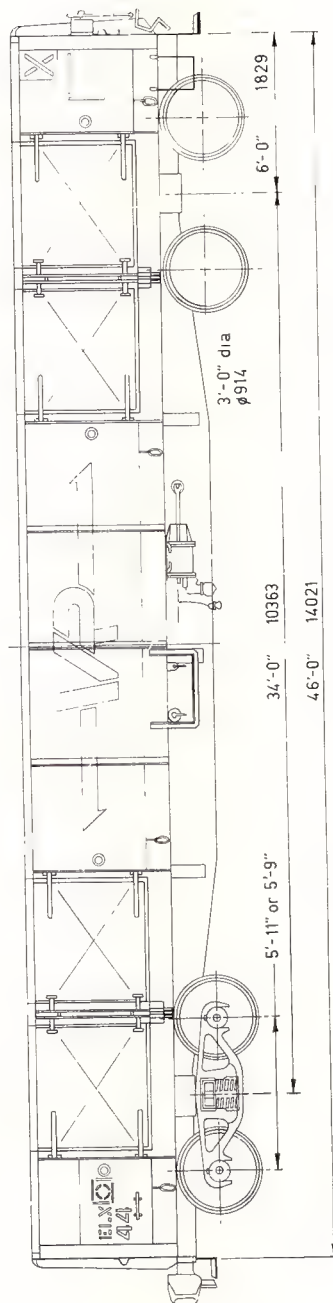


This photo shows the Side 2 of ELX 41, at North Melbourne, 22-1-78. These views can be referred to as "three-quarter" shots, a reference to the angled view of the photo.



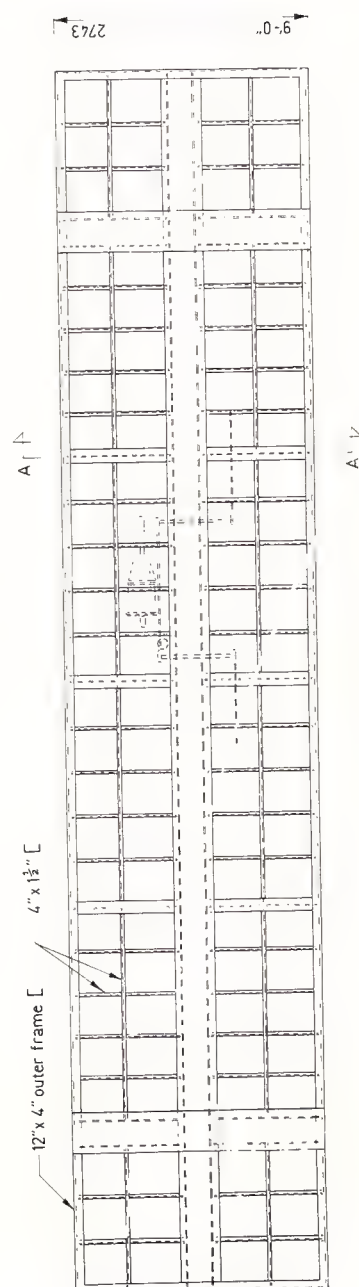
0 1 2 3 4 5 6 7 8 9 10 feet
0 1 2 3 metres

ELX
General Purpose Open
Wagon
VR

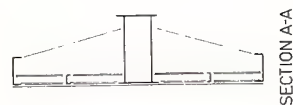


FLOOR LEVEL
3'-11 1/2"
1200

8'-5 1/2"
2587



BASIC UNDERFRAME
Viewed from below

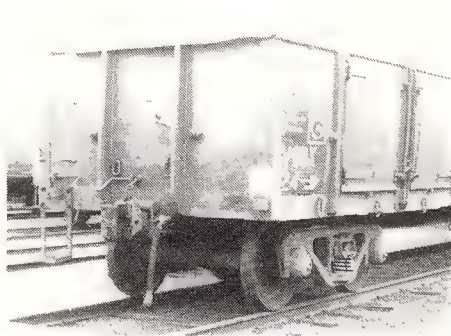


SECTION A-A

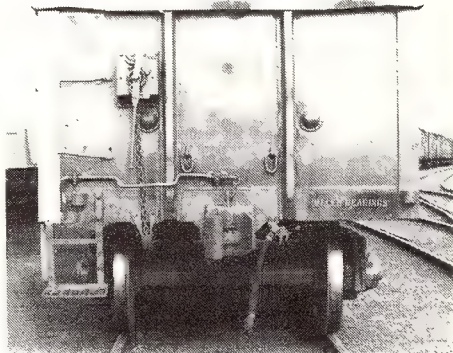
The first reference to a new bogie open wagon appears in 1959 with the authority to construct thirty wagons for carrying sheet steel. The wagons were to be 46' long and coded E, numbered 203 to 232. But these were never built. The next indication of bogie construction is the extra wagons required for service to interchange traffic on the standard gauge. The 1961 reference indicated that 30 wagons were under construction and that 80 wagons were planned. They were 50 ton capacity and coded ELF. These wagons were plain sided and for general purpose traffic, being 3' longer than an E. However doors were identical and side wall height the same as those E wagons rebuilt with welded sides, ends and doors.

These wagons were issued to traffic with both ELF and ELX codes, Table II shows the codes introduced to service, dates of construction and number groups of all the plain sided types. It will be noticed that the wagon numbers were not built in sequence. The various workshops involved construct rolling stock in blocks of numbers with subsequent parallel construction.

All ELF vehicles built to 9/1962 were converted to standard gauge operation between 11/1961 and 9/1962. The first changeovers



A three-quarter view of the non-handbrake end (End 2) of VOBX 24. This wagon has since been rebuilt to a corrugated version. February 1980.



The handbrake, or No. 1 end, of ELX 41 at North Melbourne 22-1-78.

were ELF 6, 7 on 21-11-61 at Dynon. In 1963 the 'X' coding was adopted to denote the wagon suitable for bogie exchange. Vehicles built new from 6/1963 (except ELF 91, 92) were issued with the ELX coding. Those ELF wagons already in service were recoded to ELX between 7/1963 and 5/1965.

TABLE 1

Code	Years Built	Number Group	Load Capacity
R	1880	1-76	20 tons.
QR	1889-1930	1-407	20, 26 & 30 tons. (20 & 26 tons later upgraded to 30 tons.)
OO	1899-1902	1-6	40 tons.
E	1925-1928	1-202	40 tons (later upgraded to 44 tons).

As previously mentioned, there are two types of plain sided ELX bogie open wagons. The first group can be listed as a general purpose type. The numbers for these are: — 1 to 65, and 69 to 71. Some of this group appear to have a heavier side wall support. A close inspection inside the wagon shows that these wagons are fitted with vertical slots to fit load division boards. These are to help secure loading when the wagon isn't fully loaded. The vehicles fitted with these load division slots are: — 12, 24, 30, 60, 62, 69, 52 and 58. One of the VicRail diagrams indicate that 52 and 58 belong to the heavy duty group as shown in the following paragraph. The diagram, E-3, is incorrect as these wagons are fitted with the load division slots. ELX 24 (VOBX 24) has been recently rebuilt to a corrugated VOCX, at Bendigo 4/1981.

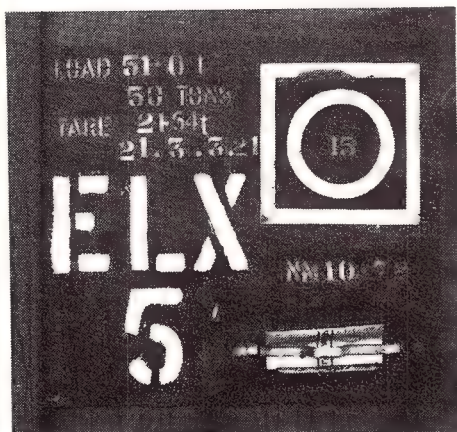
The other body style is the heavy duty type



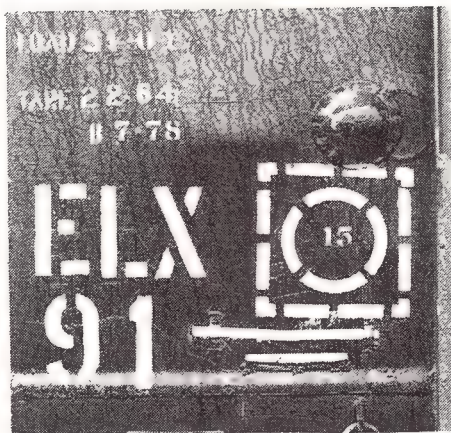
Side on view of the handbrake side of heavy duty style of ELX (later VOBX). Shown here, Albury, November 1974.



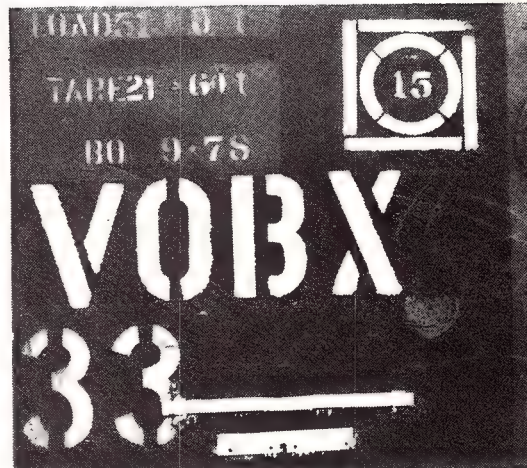
Side 2 or the off-handbrake side of the heavy duty body. Note ends which are similar and the heavy channel side wall supports. Photo at Dandenong, 5-12-78.



An example of standard 13cm (5 inch) high lettering applied to rolling stock until 1970 when the 18cm (7 inch) high lettering was introduced.



Lettering section of a 'typical' ELX. Note the gusset on the sidewall channel support, as fitted to all supports along each side. The 'dimple' above the Grade Control/Load Compensating Brake symbol is the metal cup protecting the internal lashing bar. Photo on 5-12-78.



Lettering for a VOBX showing the reduced size of the brake equipment symbols. Lettering is 7" high. Beneath the LOAD and TARE weights is the lettering "BO 9.78" which indicates the weighing date for the wagon and BENDIGO as the location (BO). Photo taken on 16-8-80.

and the wagons are quite unmistakable. The group numbers for these are: — 66-68, 72, 73, 91-106. This group has heavy channel side wall supports and a noticeably heavier door construction. Both groups of plain sided wagons have the ratchet style of handbrake and pipe coping along the side edges. None of these vehicles are fitted with end or centre ridge gear to support tarpaulin coverings. Only those wagons which have been rebuilt to corrugated style are fitted with ridge gear. The numbers for these wagons is given in the rebuilding section.

were required for the traffic. Ten ELX wagons were fitted with coil steel cradles along the floor in row. These wagons were recoded to SLX and renumbered to a new group, 1-10. The ELX to SLX conversions were carried out from 12/1965 to 3/1966. SLX 1 to 10 were converted from ELX 43, 2, 46, 9, 44, 40, 31, 14, 3 and 45 respectively.

The CSX vehicles were introduced 1966/67 with both classes running in traffic together

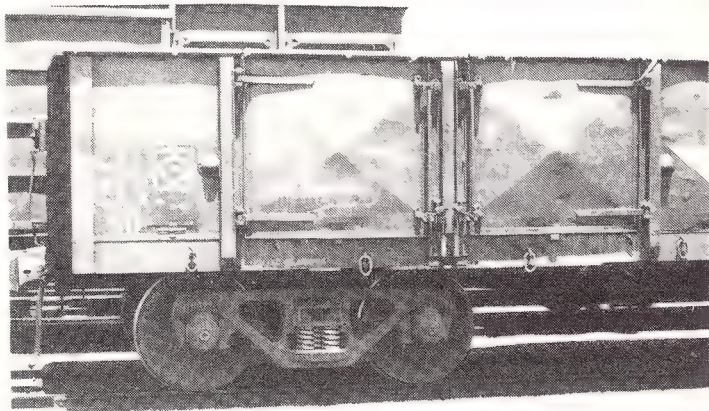
until the SLX class was recoded and renumbered back to ELX between 6/1967 and 8/1967.

Wagon Rebuilding:

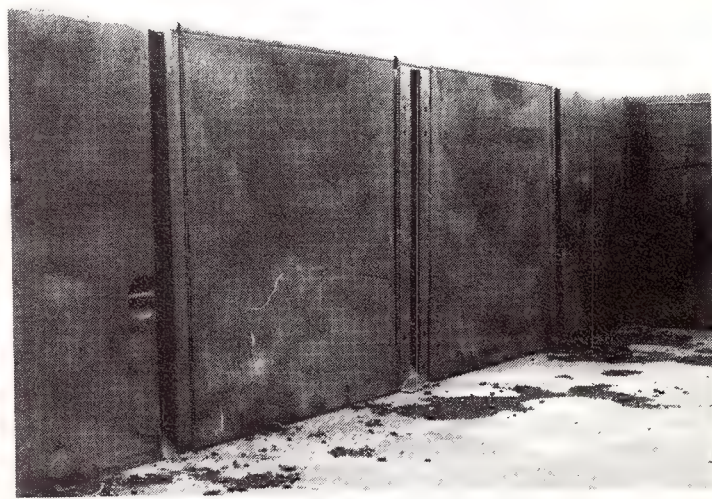
Due to body damage, ELX 14 (late SLX 8) was rebuilt with a corrugated body on 19-6-67. This was the only ELX rebuilt until the mid 1970's. By 1977, the bodies of some ELX wag-

Coil Steel Traffic:

Until the introduction of the coil steel wagons coded CSX(VFSX) in 1966, some wagons



This close up view shows the external appearance of ELX's fitted with the load division slots. Refer to text for vehicles so fitted.



An inside section of VOBX 60 showing the load division slots. The photo shows one of the lashing bar sockets, slots each side of one door set and a slot down the centre door stanchion which is removable. 27-10-80.



VOBX 5, used for slab steel transport. Flinders Street, 2-10-80.

ons were much the worse for wear. They were in storage near Bendigo and were rebuilt during ELX construction programmes taking place during 1977/78. Plain sided wagons rebuilt as ELX corrugated sides were: — 6, 10, 11, 15, 23, 32, 36, 37, 64 and 69. Wagons rebuilt to VOCX were 4 and 17. Plus the recent rebuild of VOBX 24 to VOCX 24.

The rebuilding involves stripping the sides and/or ends from the wagon and building a new superstructure to the underframe. The style of body is determined by the construction of regular wagons being built at the time. In most cases the ratchet handbrake has been reused, but where required the 'Miner' handbrake is used.

Four Letter Recoding:

Although the recoding to four letters applies to all ELX wagons, only those plain sided types will be listed here. The recode for ELX wagons not fitted with standard ridge gear is VOBX and this applies to plain sided types as well as non-fitted corrugated versions. The V and O simply indicate the owner system, Victoria and the wagon group concerned, OPEN BOGIE wagon. The B is for 'Type B' (no ridge gear) and the X remains as bogie exchange identification. Wagons rebuilt to corrugated sides have been recoded to VOCX, C indicating 'Type C' (ridge gear fitted). An exception was ELX 14 (rebuild) which was recoded to VOBX. For freight centre traffic the code VOCY has been used and some plain sided rebuilds are in this service. A more detailed explanation will appear for the ELX corrugated side versions, to be printed later.

In 1980 the VOEX code appeared, converted from plain side ELX/VOBX wagons. With the new coding came another number group, 1-9. The E indicates 'Type E' and the wagons are used for the transfer of slab steel from Albury to Hastings where Lysaghts' cold rolling mill is. The slabs come from Port Kembla and are trans-shipped by overhead crane at Albury. The VOEX conversion involved door removal and the placement of floor bolsters and end beams across the bulkheads. Conversions took place between 3/1980 and 9/1980.

Bogies:

The ELX/VOBX/VOCX/VOEX wagons are a 50 ton capacity wagon and the VicRail 'XC' type of bogie is used. Identical bogies are used for standard gauge operation but are fitted with 4'8½" gauge wheels and coded 'XSC'. As these wagons are bogie exchangeable, other interstate system bogies can be found in service.

Equipment:

All ELX vehicles are fitted with Load Compensating Brake (square symbol on lettering panel) and Grade Control (circle symbol on lettering panel).

Lettering and Colour Scheme:

The ELX wagons were introduced to service with small VR logos painted one per side and with white squares and black letter 'F' symbols painted thereon in diagonal corners. To denote that the wagon ran on roller bearing equipped bogies, a small black dot (about 3" across) was painted in the centre of the handbrake identification squares. To conform to the NSWGR rolling stock code, those wagons used for standard gauge running had the letter 'F' markings obliterated and the handbrake I.D. marks painted over. The wagons were stencilled 'Roller bearings' on sides and ends. With the VicRail adoption of the 'X' classification in 1963, the symbol 'X' was painted on a white square in the diagonal corners of each vehicle.

Traffic:

The ELX is a general purpose wagon and can be seen in a variety of service conditions. It is used extensively in bulk commodity traffic such as briquettes and scrap metal. They have been tested in wheat traffic but are unsuitable due to the length of time in unloading. In general service they are used for produce transfer, machinery and other industrial traffic as well as the occasional container transport. In rail related work, they have been used for scrap wagon transfer, bogie and wheel movements and as rail carriers.

This article was written from information to hand at 5/1981.

Future articles in AMRM will detail the VicRail corrugated side ELX and the ELX coded open wagon as used by SAR/ANR.

Locomotive colour schemes on AN's Tasmanian Region

The introduction of Australian National Rail's corporate identity scheme in early 1981 introduced a further colour scheme to the Tasmanian Region's diesel locomotive fleet. The first two vehicles repainted in the AN green and gold colours were diesel-electric locomotive X21 (the fourth different colour scheme carried by this locomotive in its 29 years of service) and inspection motor DP13, both of which were released to traffic on March 27, 1981.

The repainting of these two vehicles introduced the fifth colour scheme currently seen on AN's Tasmanian locomotives. These are (at 30.6.81):

Yellow with black zebra stripes (AMRM 101): all Z, ZA, Y, XA, X (except 21, 26) VA, V (except 6), W; U3.

ANR yellow/brown (AMRM 100): 859, 860, 867.

SAR orange/brown (AMRM 100): 855, 856, 857, 858, 865, 866.

AN green/gold: X21, X26, DP13.

TGR red: U1, 2, U4-6, V6.

Locomotives U1, U2, W1 and W2 were off register at this date and were awaiting disposal. Locomotive V6 is currently stored, while U4-6 are kept for emergency shunting purposes only at various country locations. Thus there are no red locomotives in active daily service.

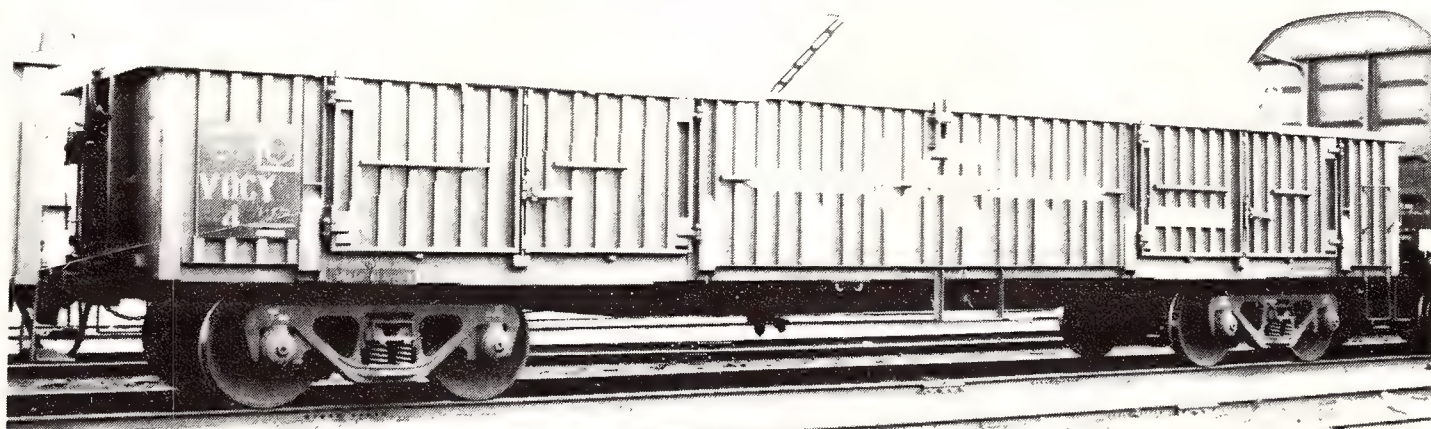
As well as the five different colours seen on Australian National's system, the Emu Bay Railway operates its light blue/dark blue coloured disels in Burnie yard.

These variations in colour scheme give the modeller plenty of scope for varying locomotive colours, either within the one class or throughout the locomotive stock and allow a slight individuality to be introduced onto the model railway.

Michael Dix

TABLE 2

Code to Service	Number Group	Built at (Workshops)	Date to Service
ELF	1-30	Ballarat	7/1961 to 10/1962.
		(ELF 1 into service 18-7-61)	
ELF	31-45	Newport	7/1962 to 12/1962.
ELF	46-60	Ballarat	12/1962 to 6/1963.
ELF	61-71	Newport	12/1962 to 5/1963.
ELX	72, 73	Newport	6/1963.
		(The first ELX to service was ELX 72, 12-6-63)	
ELF	91, 92	Ballarat	6/1963
		(The last ELF built was ELF 92, to service 26-6-63)	
ELX	93-106	Ballarat	7/1963 to 12/1963.



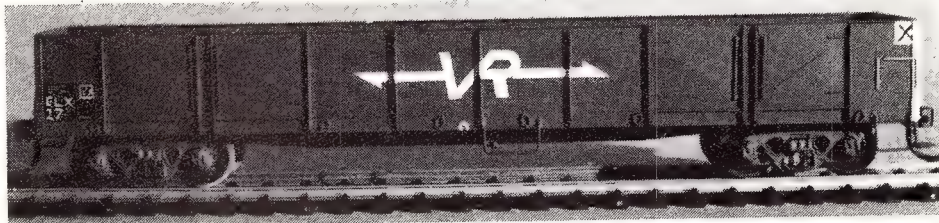
ELX 4 was condemned at Bendigo and rebuilt to a corrugated style. It is shown here in Tottenham Yard as VOCY 4, in Freight Centre traffic. Date: 16-8-80.

Build a VR ELX Open Wagon in Styrene

Peter Eisenhut describes the construction of an ELX in styrene

Some Prototype Information:

The prototype of this model is the early flatsided version of an open bogie wagon, built between 1961 and 1963. A number of these are being rebuilt and they are re-issued to traffic with the corrugated sides characteristic of later series ELX wagons. In this article we will concern ourselves with ELX Nos. 1 to 71, as originally built. Photos of Nos. 4, 6 and 27 appeared in Jan/Feb. 1980 and Nov. 1980 Newsrail.



The finished model.

Before You Start:

If you have not modelled in styrene before, I recommend that you read the article "Modelling in Styrene" by Ian Thorpe in the July/August 1980 issue of AMRM. The only thing I would like to add on the subject is that as a matter of personal preference I use a smooth vinyl floor tile as a cutting surface and a single-edge razorblade to cut with. Both these items are very inexpensive and disposable.

You will note that in this article I have used feet and inches, rather than metrics, because the HO scale rules available are in imperial, and also because the prototype was of course built to the old measurements. It will also aid modelers working in scales other than HO.

The Model:

Start by drawing the sides, ends and floor on a sheet of 30thou styrene. The sides are 45'6" long and 5'3" high. Draw them one below the other, then find the centreline at 22'9" and then measure 9' on either side towards the ends. This results in four panels of 4'6" each, and also determines the location of the doors. The door-openings are 4'7½" each, with a 12" stanchion between, giving a clear opening of 10'3". This is again measured towards each end, and you should now have two endpanels of 3'6" each. (Fig. 1) Turn the styrene over and repeat the procedure on the reverse, which will become the inside of the wagon, making sure this coincides with the one on the front. Scribe all the vertical lines on the reverse side with a compass point or other suitable tool. This will represent the internal joints and door openings. Now return to the front (outside) again, and scribe a line 9" from the bottom along the full length of each side, to show the joint between the underframe members and the actual car side on the prototype. The sides can now be separated from the sheet.

The ends are next, and these are 5'3" high and 9'6" wide. They are again laid out in a pair on the styrene, and the locations of the two vertical end supports, which are 36" apart, can now be determined. As on the sides, make a scribed line 9" from the bottom.

The floor is also 45'6" long, but the width is 9'. The bogie centres are 34' apart, and should be marked out now. The bolsters will be built up from one layer of 60thou styrene and three layers of 30thou. (see Fig 3). Cut the first layer of 9' x 18" from 60thou and glue to the underside of the floor, exactly over the bogie centre. Make six fillets 9' x 24" from 60thou, and glue to the corners and centre. (Fig. 2) These will add strength to the structure and they also serve to raise the floor to the correct level, since the sides extend 9" below it.

Now set the floor on a piece of glass or laminex, hold one side against it and flow some MEK along the joint, then repeat for the other

side and the ends. Take care that everything is right side up and nice and square.

When dry, turn over and complete the bolsters with three layers of 30thou (Fig. 3), and set aside to dry completely.

The eight doors are 4'6" x 4'6" each and are constructed from 10thou material. An excellent method of fabricating them was described by Peter Gibbs in his GY Article in the Jan/Feb. 1980 issue of AMRM. The measurements, location of hinges and door fasteners are identical on both the GY and the ELX. *We have reprinted that part of Peter's article elsewhere in this issue. Ed.*

With the doors in place, install the angle iron reinforcements to the sides. These can be made from Plastruct 3" x 3" angle, Evergreen 1" x 4" and 1" x 2" strips, or you can cut your own from 10thou styrene. If you want to try and make your own you will need a new single-edge Blade and a fresh cutting surface. After a few tries you will find that the strips are quite easily produced in a uniform width. About 3 or 4 light passes with the blade should be sufficient. With the aid of your HO scale ruler make some 2" and some 4" strips.

From the 2" stock cut 22 pieces by 5'3" long. Glue one to each vertical side of the doorpanels and one each to the remaining three vertical lines on each side. Cut another 22 pieces of 5'3" from the 4" stock. Snip off one 45 degree angle from each top and bottom, and then glue on edge next to the 2" pieces to form a right angle. The 4" strips on the three centre panels should be glued to the right of the 2" ones, whereas the doors have one each left and right. Also see photos for clarification.

The corners are 4" x 4", and they are formed from one length of 4" strip and one 3", to compensate for the thickness of the material. Glue the 3" strip on the ends first, then finish off by overlapping the 4" one on the side, this will result in a neat, square corner. Cut some 5" wide strips from the sheet of 10thou. These will become the coping which runs along the top of the wagon. Start on the sides first, hold the strip so that it is flush with the inside, then flow some MEK along it, and gradually fix the whole length to the side. Allow a few millimetres overhang at each end, so that everything can be trimmed to exact length, after the end coping has been positioned. This consists again of a 5" strip on top, located between the two previously installed side strips, which can then be trimmed off with the blade.

The end braces are now fashioned from 60thou material. They are 5'3" long, but they vary in width, determine their shape from Fig. 4. Cut them from the sheet, then shape with a file or emeryboard. Note that the front surface

is rounded off. Make sure they fit flush under the coping, because to finish the end, we glue another 5" strip over the braces, flush with the top, to form an angle. When this is completely dry shape each corner, using the photos and plans as a guide. An emeryboard is a good tool for this operation.

With the body of the model just about complete, turn it over and measure between the bolsters, this should work out at 32'6". On the 20thou sheet draw the sides and top for the centre sill, using Fig. 5 as a reference. The total width of the sill is 24". Glue its two sides to the floor first, then before closing it with the top plate insert the weight of your choice, fashioned from typemetal or lead. There are three floorbraces visible on each side, these run between the bottom of the centre sill and the wagon's sides. I made them simply from 3" strips of 30thou. Their location can be read from the plan, just under the inside doors and in the centre. I used a Roundhouse brake cylinder to simulate the presence of the brakegear. With the model still upside down, file a notch in each end, level with the floor, to receive the Kadee No. 5 couplers.

Swap the 30" wheelsets supplied with the bogies for the more correct 36" size (Kadee or similar), and drill a hole in the exact centre of the bolsters, either to accept a small selftapping screw, or alternatively drill and tap for your choice of kingpin.

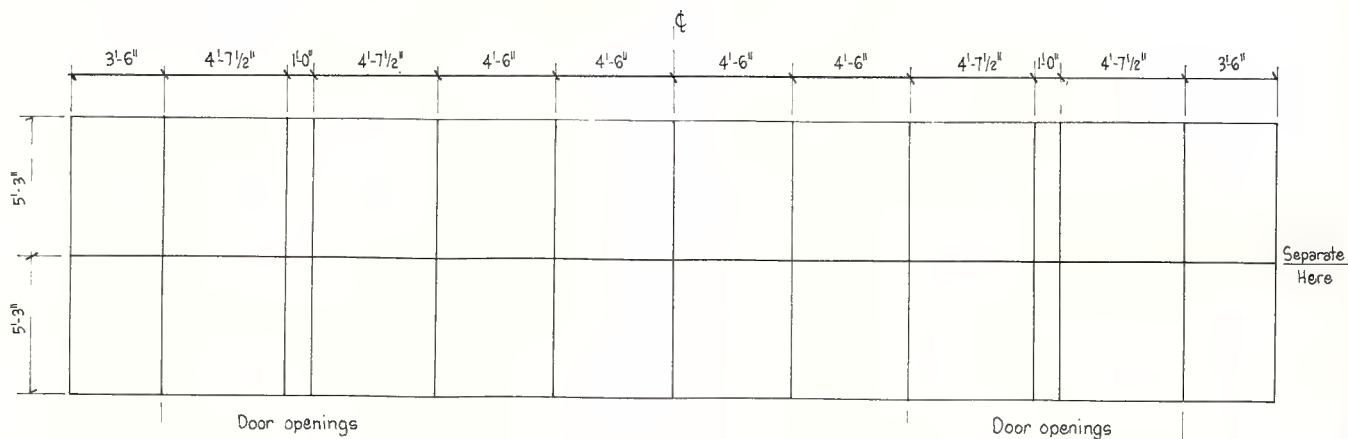
Some of the following small details could be omitted, however their inclusion will result in a more realistic looking model, and they are relatively easily applied.

Handbrake:

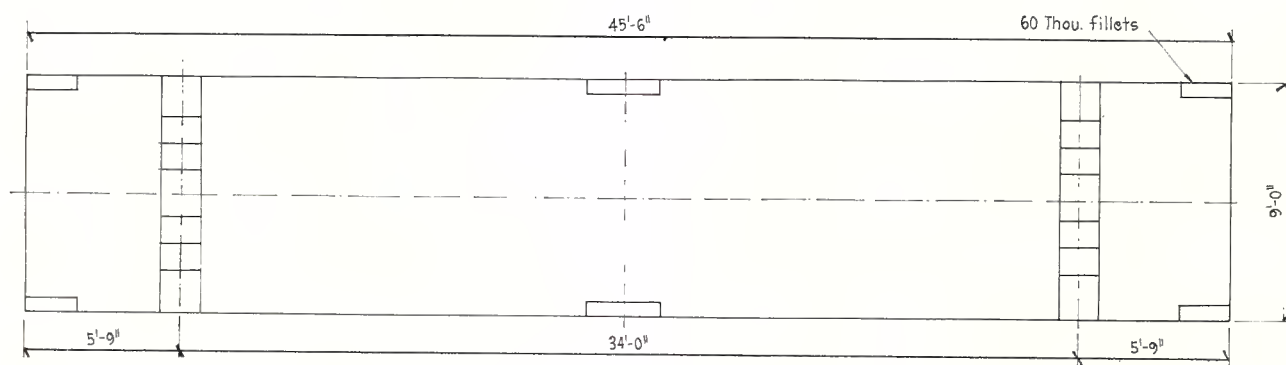
Shape the handbrake assembly from a 9" square of 20thou styrene for the mounting bracket, and the handle from a thin strip of 10thou. The handbrake is located on the right hand end on the same side as the brake cylinder.

Shunter's Steps:

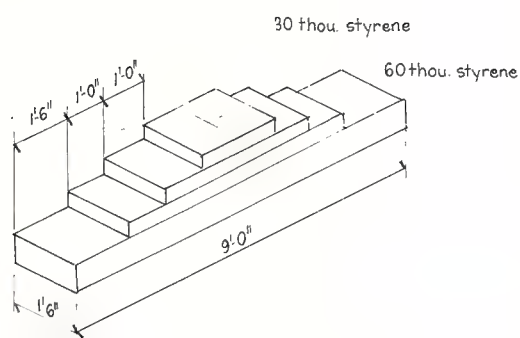
For the steps I use Eckon Brand photo-etched brass ladder strip. One packet will provide enough steps for 16 wagons. With a pair of scissors or small tinsnips cut between every third rung. Then hold each piece with a pair of flatnosed pliers just below the bottom rung and bend to a right angle. Superglue these to each end of the model, one below the handbrake, the other diagonally opposite, in such a way that the bottom of the step is approx. 18" below the body. While the step frames are drying, make the foot plates, which are 18" x 12", from 10thou styrene, then glue in position.



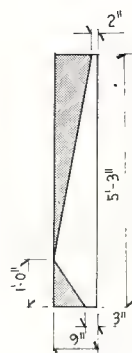
① **SIDES** Use 30 thou. styrene



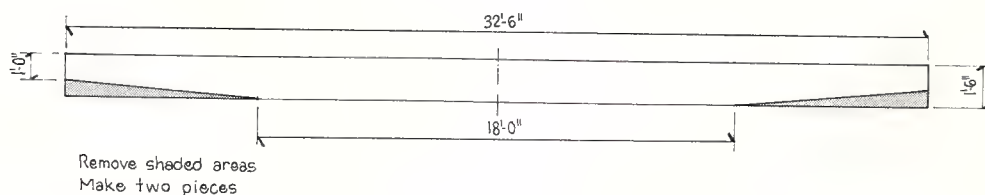
② **LOCATION OF BOLSTERS & FILLETS**



③ **BOLSTER** Not to scale



④ Not to scale
Remove shaded area



Top Plate

⑤ **CENTRE SILL** Not to scale

Handrails and Stirrups:

To eliminate drilling holes in the sides of open models such as this one I prefer to make the handrails from 1" x 1" strips of styrene (10thou), which I simply cut to length (18") and glue to the sides and ends in the required positions. Later, when the model has been painted, they can be picked out in yellow to look quite convincing.

There are stirrups on the sides, one each on the same corners as the steps, these are 18" x 18", and one each near the centre of the wagon, just to the right of the centre brace. These two are 24" x 18". Bend them from suitable wire and superglue to the body.

Lashing Rings:

There are six lashing rings per side, and two on each end, between the end braces. I cut mine from a piece of small chain, approx. 2mm in diameter. It came from a cheap piece of jewellery, which is available at Coles, K-mart, etc., although some hobbyshops carry this type of chain. Again use superglue to fasten the individual links to the model.

Internal Lashing Points:

These show up on the outside as a large dimple, which is best represented with the heads snipped from small pins and glued to the outside of the wagon. The kind of pins that come with most shirts are just right for this. The dimples are located on either side of the doors.

Painting and Lettering:

Before painting, give the model a coat of Floquil R19 Barrier, which is essential to prevent crazing of the plastic surface. After overnight drying, the final coat of Floquil R74 Boxcar Red can be applied, either with an airbrush or by brushing it on. This colour is also available in an aerosol can. Again let dry thoroughly then spray with a thin coat of Testor's Dullcote.

The VR logo is a decal by M'n'J, approx. 45mm long, and is applied in the following way. Draw the position of the three reinforcing angles over which the transfer has to be placed on the front of the decal. Cut along these lines, immerse in water and apply to the model between the angles. Use Solvaset or similar to aid adhesion. When dry use white ink and a mapping pen to touch up the uncovered portions of the angles, to make it a proper signwriting job.

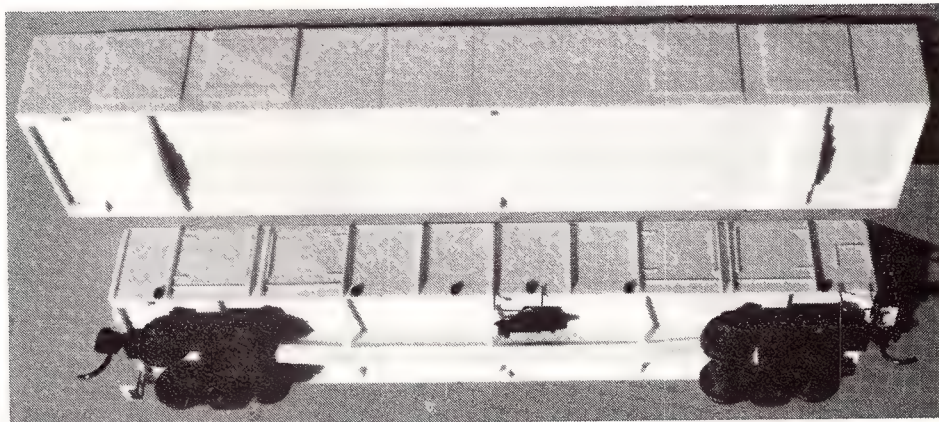
The wagon classification, number etc. is in white on a black square approx. 2ft square, and this is best done by first painting the square in Floquil R Engine Black, and then carefully printing on this with the white ink and mapping pen.

The corner angle next to the handbrake is painted white. This is also where the black X on a white background is displayed, which also appears on the diagonally opposite corner. On the non-handbrake end there is a small white square to signify to the shunters on which side the brake is in fact positioned.

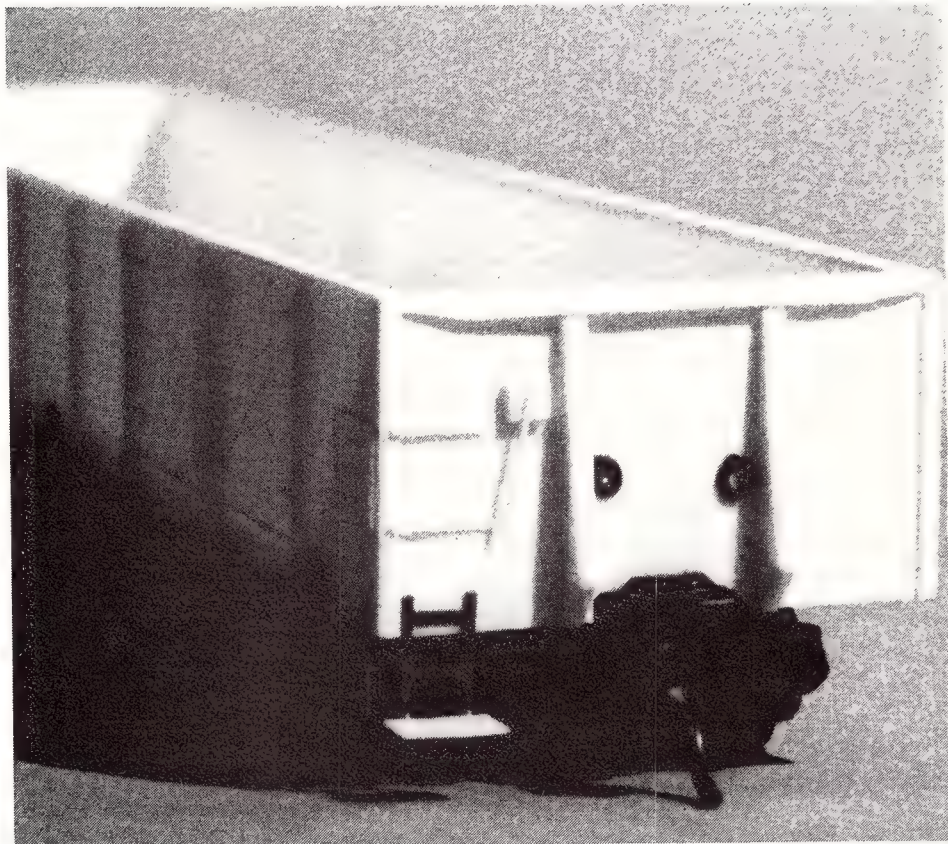
This completes the model of an early ELX wagon, except for a final overspray of Testor's Dullcote, and perhaps some weathering.

List of Materials:

10thou, 20thou, 30thou and 60thou styrene sheet
One pair Roundhouse rollerbearing bogies
Four sets Kadee or similar 36" wheelsets (10.5mm dia.)
One pair Kadee No. 5 couplers
Floquil R19 Barrier, R74 Boxcar Red, Engine Black, R31 Reefer Yellow
Testor's Dullcote
Thin wire for stirrup steps (see text)
Brass ladder stock (see text)
2mm chain
M'n'J Decals (VR logo)
White ink (see text)
Shunters' steps (from Broad Gauge Models)



Side location of fillets and multi-piece bolsters. The rear model is ready for painting.



End view of ELX27 showing handbrake and shunters' steps.

All photos by author.

SCRATCHBUILD V.R. GY WAGON DOORS

The following is reprinted to assist modellers with the ELX project. Peter's full article on the GY construction can be found in the January/February, 1980 issue of AMRM.

Step 7.

Mark up and cut out centre door sills measuring 1'3" x 9" deep from .030" styrene. Take two door sills and adhere the longer edge to underside of each side directly underneath and bisected by your previously drawn vertical centre line.

The door latching rod detail is provided by three pieces of strip to each side. The thicker six scale inch microstrip (5'3" long) is laid down the centre line and flush with the top of the side and the bottom of the centre sill. Two pieces of three scale inch microstrip 2'9" long are laid edgewise on either side of the centre strip just far enough apart so they are vertically in line with the outer edges of the door sill, and 9" down from the top edge of the side.

Step 8.

Next, determine the exact centre of each door area on both sides; i.e. 2'3" out from the

latch rod detail and 2'3" down from the top of the side.

Snip out little squares approximately 1' x 1' from .020" sheet, and adhere one to the centre of each door just marked. Now take one of the previously prepared doors, wipe the under surface completely with cement (but don't over cement) and carefully press onto wagon side flush with the latching rod detail strip. The centre of the X should be over the little square of .020" sheet ensuring that the X centre stands out slightly proud. Hold down with fingers until door is firmly adhered to side. Repeat procedure with other door.

Select two pieces of .020" strip 6" wide by 5'3" long and cement each EDGEWISE to the wagon side right up against the outer edge of each door. Where the door side frames you have just affixed meet the outer edges of each door X is the position to glue the precut 2' long door hinges using the same 3" microstrip size as the latching rod detail. Nine inch long latches (4) are also glued to top and bottom of latch rods, butting the central, vertical rod and slightly overlapping each door.

Up-Rating Monochrome Film

This issue we feature a letter from a Canberra reader who echoes a number of requests I have received recently dealing with black and white film speed up-rating. Whilst I have touched on this subject in some previous issues, and given some reasoning for doing so, this following article should clear up any problems — or fears — most readers carry for the subject. The Canberra letter reads . . .

Sir,

Being as interested in the real life railway scene as in models, and about to renew my dormant interest in monochrome photography, including all stages of processing, I have just re-read Leon Oberg's articles in the January/February and March/April 1980 editions of Australian Model Railway Magazine.

I am particularly interested in the technique of up-rating film speed for extra contrast and detail, and would appreciate it if Mr Oberg could advise, using brand names if necessary, the materials, development times, and the temperatures he uses for his best results.

P. R. Neale.
FISHER, ACT.

I must thank Mr Neale for his interest in the subject, and say I am glad to answer in detail his questions regarding the up-rating.

Before one begins to consider up-rating any film, one must firstly have a reason to, and afterwards, weigh this up against the few obvious pitfalls. And yes, there are some!

Firstly, it is generally accepted that by up-rating a film's speed, extra contrast and grain content will result. Both can be real enemies to the recordist-type of rail fan photographer, particularly if overdone. (But I hasten to add that by "recordist", I refer to those photographers, including modelling enthusiasts who want to faithfully record a scene, item of rollingstock or structure, in as detailed condition as possible. Excessive grain or contrast can often blot out certain crucial details.)

Taking the "Reason" situation secondly, I up-rate my film speeds when the weather is dull to enable me to punch out a little added contrast from an otherwise flatter picture. In so doing, I am also maintaining the all important depth of field properties of the lens. As I have previously said in this column, I prefer to shoot quickly moving trains at a 500th of a second or more (unless of course a slower speed will assist with some special effect). In clouded skies, 125asa film shot at 500th brings aperture readings of about f3.8 or f4. If the light gets worse (heavier black clouds) as it often does in the south-eastern states, an aperture reading of f2.8 is simply not good enough as far as I am concerned. Unless one is really careful, too much can be out of focus. So . . . what do we

**PHOTOGRAPHICALLY
SPEAKING
CONDUCTED**

**by
Leon Oberg**



do . . . up-rate!

By up-rating the normal Ilford or Kodak 125asa film now to 200asa, the previously almost un-shootable f2.8 aperture now suddenly becomes bearable at around f4 (or a fraction under). And just a slightly added punch to the contrast curve results, which stretches the highlights and lowlights slightly, adding detail into the bargain. And, particularly with the Ilford FP4 product, I am yet to notice any added grain at this film speed.

Then, by further up-rating that same film to

Below: As often happens, important pictures have to be taken at inopportune times of the day, like the morning the "Silver Jubilee" special train arrived in Goulburn en route to Canberra on December 28, 1977. Worked by 44213 and 44100, this train arrived in Goulburn at 5.52am, some 12 minutes before the sun rose in the city (remember, it was daylight saving time). Not wanting to miss the pic, I uprated some HP5 to 800asa, and shooting at 125th at f4, managed this. Nikon F2 Photomic.



400asa, that same previously dim f2.8 reading now can be shot at about f5, adding a little more contrast and further keeping the depth of field department smiling — particularly when using a medium telephoto lens. However, my experience with up-rating to 400asa indicates that some minor grain will tend to show at 400asa from 35 mm cameras when printing pictures of 8" x 10" size, and at 650asa grain does really begin to become noticeable. But the secret here is better chemistry and it is perhaps wiser to say that when up-rating FP4 (or any film for that matter) one can slightly under-develop the film and afterwards print the photograph for its entire developing time. This tends to soften the grain.

Developing times for these up-rated films will probably vary from operator to operator, and again it will depend upon what gamma reading (contrast rate) he or she desires. On most developer packets which I have come in contact with, the manufacturers suggest (as a guide only) that the film can be developed to suit a gamma reading of G0.55, to suit (duller?) condensor enlargers, or to suit a gamma of G0.70, for (faster) cold light enlargers. In a nutshell, what this means is that the former gamma reading produces lighter negatives whilst the latter reading provides for blacker negs.

I have actually standardised on something generally in between these figures for FP4 film, and when processing in fresh ID-11 developer used in its un-diluted state, I work to the following table:

Film	125	160	200	400
Speed	asa	asa	asa	asa
Devel.	6.40	7.10	7.40	8.34
Time +	mins.	mins.	mins.	mins.

+ Agitated 8-10 seconds each minute.

Temperature 22 deg. C. Winter
21 deg. C. Summer

The higher the uprating of the film speed, the less agitation required. The shorter time film is agitated, the finer the grain will be.

Note: The temperature variation is one which I employ, and will only be necessary in cold climates, where no thermostatically controlled equipment is available. A temperature of 22 deg. C will fall to near 20 deg. C during the duration of development if stainless steel tanks are used during winter months. This averages out at the summer reading of 21 deg. C.

Up-rating faster films, however, can be a totally different ball-game and the word "reason" really must come into play. Kodak's Tri-X and Ilford's recently released HP5, both of which are 400asa products, should generally be fast enough for most readers' needs, and both can be processed easily. As far as grain is concerned, it has been my experience that the HP5 product produces a much finer grain than the Tri-X, that is when comparing similarly taken pictures and printed 10" x 8". For that reason, I have been sticking to the Ilford product when requiring really fast film and have successfully pushed the brand to 3200asa, with little grain.

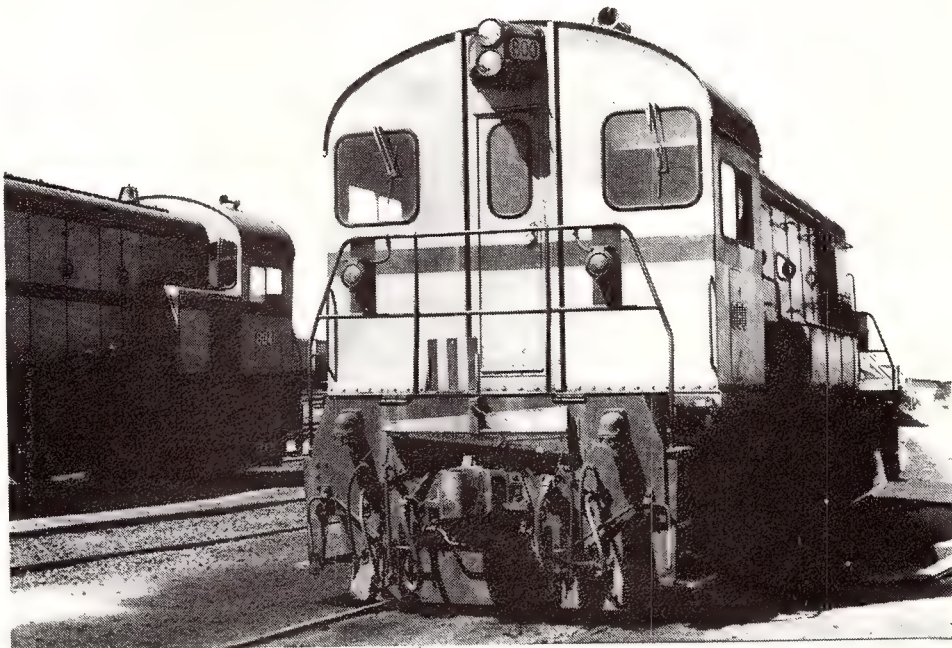
However, a word of warning when using fast films like this ... make sure your chemistry is really accurate, for any over development (or over exposure) will almost certainly lead to very excessive grain.

HP5 is normally a very warm film and, when rated normally, carries excellent shadow detail (unlike FP4). For confirmation of this, the photograph of CPH1 and CPH19 taken at Crookwell (as published in AMRM P43, Sept/October 1978) should be considered. Harsh sunlight was coming off the white building, the railmotor's front was in sunlight whilst the sides were in deep shadow. The large pine trees, things which photograph black at the



Above: This is another picture I did not want to miss, and it shows the then recently re-built and painted SRA unit, No. 4201 and a sister unit, No. 4203 bellowing out of Goulburn with an Albury-bound express freight. The use of 4201 at that stage was still under a cloud (all other units in the class were restricted to trailing positions in trains due to A.F.U.L.E. limitations), so up-rating FP4 to 200asa and daring to shoot it at 125th at f2, I managed this picture (fortunately the train was moving slowly at the time). The time: 8.10pm on December 19, 1980. Nikkormat EL.

Below: Here is a result when shooting bright locomotives in bright surroundings with up-rated film. In this case, FP4 rated at 200asa was used and the result is far from excellent for most shadow detail is lost. It shows AN locomotives 800 and 804 in Gilman Yard, S.A., in February 1978. Nikon F.



best of times, also overpower the scene. And the result? I think considering the technical problems, it was extremely pleasing. On that occasion I was trialing HP5 at 400asa.

So why go any faster?

Well there comes times when something very special is to be taken and as often happens, all possible light has gone and it is near dusk. The trick to salvage the situation is then to up-rate.

Just the other week in Goulburn I wanted to photograph the very last arrival of No. 21 Saturday Sydney to Goulburn passenger service. This train, due in Goulburn at 4.52pm ran for the very last time in favour of a new timetable on Saturday May 30. At that time of the year, just two days off winter, and less than a month off the shortest day of the year, very little light

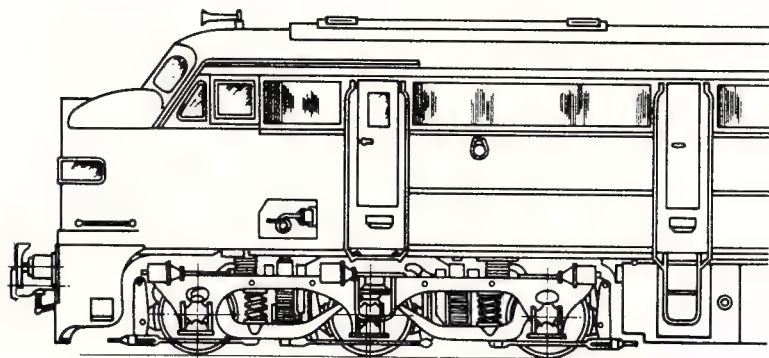
is about at 4.52pm. Then, as the time neared, it began to mist. Sadly, I almost gave up hope, but turned to a short end of HP5 I was carrying in my bag, set the camera at 1600asa, took an exposure reading of one 500th at f3.8, and the result is exceptional — and bears almost no grain!

And that situation indicates REASON for up-rating. That picture just mentioned could not possibly be taken without up-rating, and scores of my photographs (such as ANR AL-class operations in NSW, double 42-class movements and others) have been made possible in this way. All are publishable.

Processing HP5

Unlike FP4 (which one can seemingly abuse,

Continued on page 50.



REPOWERING

Two methods of adapting the Atlas SD35

METHOD 1

This project was started with the aim of improving the Lima 44 as bought with the standard power mechanism. I felt that the locomotive was a poor puller and the speed was much too fast. The conversion I am about to describe will enable fellow modellers to construct a model of a 44 class with enormous pulling power and exceptionally slow running. The locomotive I completed had additional weights fitted and the total weight of the model is 18 oz. and will pull a wagon weighted to 3 lb. 12 oz. up a 1:48 grade without any sign of wheel spin. This I feel should handle anything a modeller would ever desire from a model.

The list of materials required is as follows:

- Atlas SD35 mechanism,
- Lima 44 class body,
- Lima 44 class side frames (1 or 4),
- 1/8" brass plate,
- 010" brass sheet,
- 020" styrene sheet,
- brass angle,

- 8BA screws,
- Lima 44 class drawing (A.M.R.M. issue No. 10),
- various hand tools, junior hacksaw, files, etc.

Chassis

Completely disassemble the locomotive. Remove the shaded sections of the chassis. "A" is removed to shorten the chassis to the correct length. 7.5mm is removed adjacent to the bogie hangers; the metal is very brittle where the bogie hanger joins the main body of the chassis so take care not to break it.

Remove 10mm from both flywheel recesses to allow the bogie to swivel. The fuel tank is then cut to shape; take the measurement off the drawing and then cut an extra 0.20" from each side to allow the styrene sides to be fitted.

Chassis Joiners

The joiners are cut from 1/8" brass sheet 5mm by 140mm. Drill the holes 1/8" in the joiners and place them on the main part of the chassis (see photos and Diag. 1 for reference). Mark out the chassis for the holes. Drill and tap

8BA when both joiners are fitted. Fit each end piece in the same way.

Motor

Remove;

- plastic insulating plate (refer Diag. 2),
- flywheel spacers,
- electric contact clips.

Electrical Connectors

These are made from 010" brass (Diag. 4). Tip both ends with solder. Drill a No. 60 hole 2mm from the end of each connector. Place the connectors over the two pins at the end of the motor. Solder, and file flush (Diag. 4b). The flywheel is replaced on the shaft as close to the motor as possible without touching the electrical strips (Diag. 4c).

Bogies

Remove SD35 sideframes. Lima 44 sideframes may be fitted, obtainable as spare parts from most hobby shops for around \$2.00 the set of four. With mine, I extended the Lima sideframes by inserting 2mm pieces of styrene (Diag. 5) either side of the centre axle box. A mould is then made using latex rubber, obtainable from craft shops. The sideframe is extended a total of 4mm (1.5mm is lost during moulding). This gives the correct length. Four sideframes are then cast using Plastibond.

The shaft through the worm gear is pushed through until the universal joint housing is nearly touching the bogie body (Dia. 3).

Fuel Tanks

The fuel tank is made from 020" styrene sheet. The exact size is taken from the drawing. The filler caps, ladders and fuel gear are all made from styrene and glued onto the tank (see photos).

Air Tank

These can be any rod, metal or wood, providing they are the correct diameter. Round the ends.

Assembly

It is now time to assemble the chassis, motor and bogies. Take care with the electrical system to ensure that the locomotive runs in the same direction as every other locomotive. The universal joints should have plenty of movement otherwise this will result in a noisy locomotive. Everything should run satisfactorily. If so, the tank, sideframes and wheels can now be painted. Do not get paint on the wheel rims.

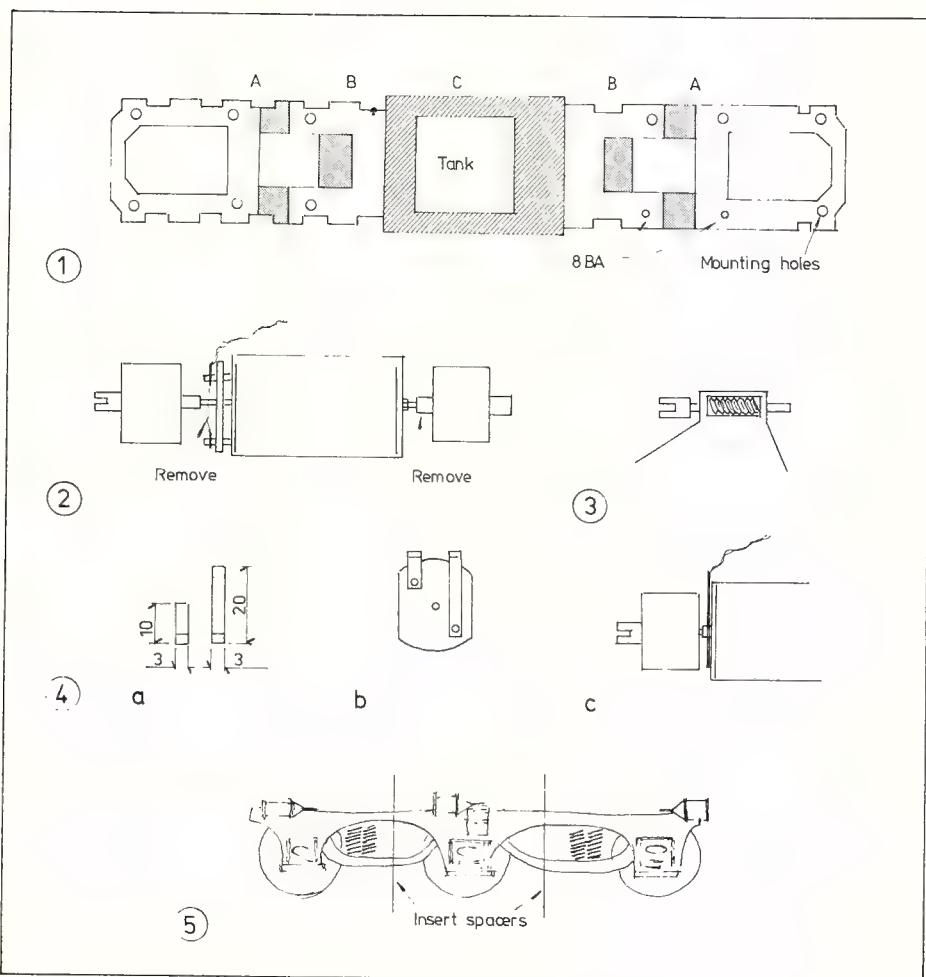
Body Mounting

This is made from 1/4" angle glued to the ends of the body, drilled and tapped 8BA.

Extra Weight

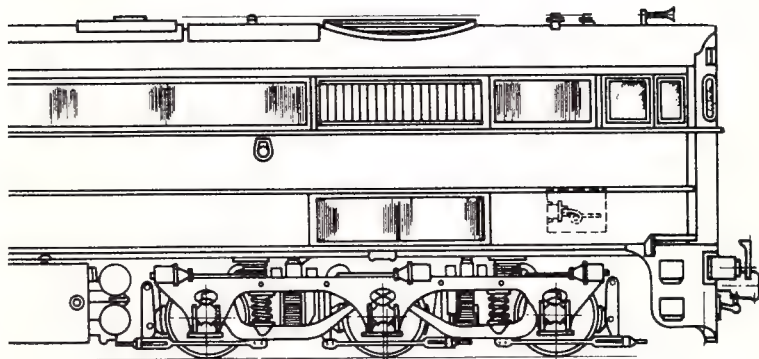
Four pieces of lead sheet, as used by Telecom linesmen for their lead cables, were inserted into the body and held in place with 5 minute epoxy.

Peter Jenkinson.



THE LIMA 44/930

mechanism to the Lima 44/930 class body . . .



METHOD 2

This is the story of my conversion. I have submitted it in the hope that you may be able to make use of it. It is not the only way to tackle the problems, but it does work well.

Remove the Lima body, cut away the screw socket inside which secures the body to the chassis, and place the body to one side.

Remove the sideframes from the bogies in such a way that they can be fitted to the SD35 later.

Still with the Lima, remove and save the fuel tank sides with the detail, then put the remnants in your scrapbox.

Unclip the SD35 sideframes from the bogies (have the loco on its back). Place the Lima sideframes alongside and cut the SD35 frames away as to be able to substitute the Lima frames back in position, ensuring that the correct pair of sideframes is at the front with the speed recording gear, and that the new sideframes are correctly centred on the middle wheel of the SD35. The Lima sideframe is a fraction long, and the more capable modeller may be able to reduce them to fit exactly.

Having fitted the new sideframes, place to one side.

Now the hard part . . . Remove the motor and associated equipment from the chassis. You will note (fig.1.) that the screw holes for the motor mount are off centre in the fuel tank. This tank is 12' long, and must be reduced by 4'. At approx. 6' in from one end (of the tank) cut through tank and frame. Now cut 4' off the end not having the screw hole in the middle.

Place the two halves together (hold in hand) and ensure an even finish. File as needed to obtain a straight frame.

After you are satisfied that this is so, the sides of the fuel tank must now be removed (see fig. 2), so that the Lima tank sides can be fitted at a later date. Approx. 1'6" must be removed. Now replace the motor. You will note with horror that it sticks up one end (see fig. 3) Once the shaded area is cut away the motor settles in quite nicely.

Now glue the two halves together, ensuring that the motor fits well and the frame is straight. Once this is done, you can attach the Lima tank sides to the SD35 frame, making sure that the top of the Lima tank is level with the bottom of the main frame (see fig. 4). Now that the frame is again in one piece, try the frame in the Lima body . . . it won't fit! All those small lugs on the side of the frame must now be filed to achieve a snug fit into the body . . . work both sides to ensure that the motor is kept in the centre of the body.

You can now place the motor in the frame. Only one fly-wheel can be fitted, since you have shortened the frame 4', and the drive shafts at one end will also need trimming to get smooth operation.

Once in place test to see that the motor does not bind, then reassemble all the associated bits. Your converted SD35 is now ready to be placed in the Lima body. There are several ways to attach the body to the frame. Personally, I built my couplers into the body, and weighted it with sheet lead, then glued a small border down each side of the body, so that the motor fitted firmly, at the right height.

Noel Potter.

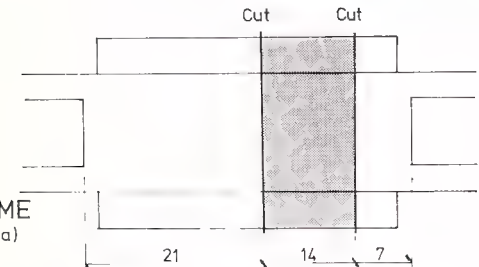
With kind permission of the Buffer Stop, official journal of the South Australian Railway Modelers' Association Inc.

The line drawing at the top of the page is from "Modern Locomotives in Service on New South Wales Railways."

COMING SOON!

**AN
N SCALE
44
REBUILD**

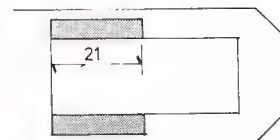
① CUTTING FRAME (Remove shaded area)



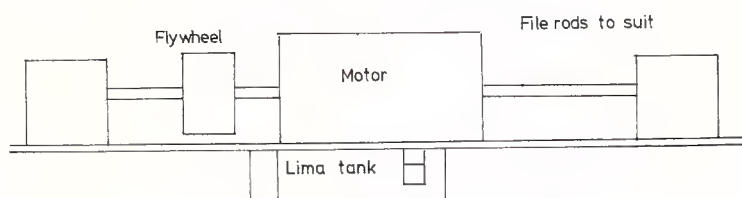
② REMOVE TANKS (Remove shaded areas)



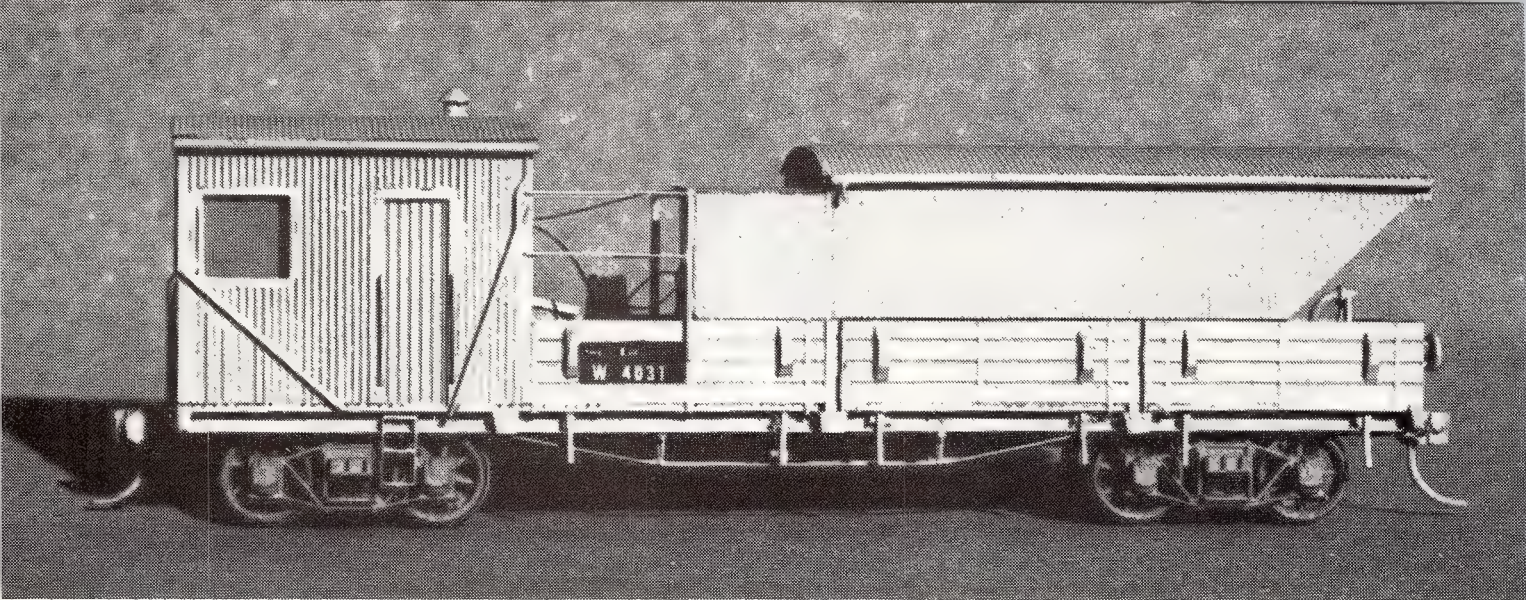
③ MOTOR MOUNTING (Remove shaded areas)



④ FINAL ASSEMBLY



NOTE 1. Diagrams are note to scale
2. Dimensions are in millimeters



Is your track overgrown with waving green grass?
Do you want to know where the rails went?
Well now, we have just the project for you

BUILD A POISON SPRAY VAN

and save time modelling those weeds among the ballast.

When Phil Curnow suggested that I build a model of the S.A.R. Poison Spray Car for use on the layouts of the Adelaide Branch Line Operators (A.B.L.O.), my reaction was not one of wild enthusiasm as I had always considered this car to be one of the most ugly units on the entire system. However, as I started to think about construction methods, I began to realise that the unique construction of this car presented a considerable challenge to one's modelling skills and my interest began to increase accordingly.

Any modeller with average skills can build this car. As usual, patience and care are the main requirements. Only the usual range of simple hand tools are required. This HO model took me 40 hours to construct and total material costs were about \$10.

Preparation

My usual approach to a new modelling project is to spend a month or two gathering diagrams, photos, etc., studying the prototype, deciding which materials to use, perusing catalogues, gathering parts and making up a preliminary list of the various jobs required to assemble the model. These lists begin as ideas which occur to me as I obtain the information described above and are periodically re-drafted until, when I am ready to start work, I have a list of all the operations required to construct the model, set out in their correct sequence. This list is amended and altered as the work progresses, completed items are struck off and, towards the end of construction, I

**Model and article
Draughtsman
Photographs**

**Kevin Kavanagh
Roger Johnson
Phil Curnow
Roger Johnson
Kev Loughhead**

usually convert it to a list of items required to complete the project.

I find that this approach makes me think ahead, to perform the various tasks in their correct sequence and to ensure that the various parts and materials are to hand when required.

The Chassis

My choice of construction materials in this instance was timber and a supply of North Eastern stripwood was obtained. The first job on my list was to cut the floor to size from 3/64" scribed sheathing 1/32" thick, carefully sanded at the edges as these will be exposed at the side of the car. As the scribing runs across the car to represent the floor planks, two 9'-0" wide strips must be cut across the width of the stock material and butt-joined to the correct car length. Use P.V.A. glue for all wood to wood joints. Turn this floor over and glue on to the underside four 3/32" channels as longitudinal underframe members. The outer channels (solebars) must be fixed with the flanges facing outwards and must be set in from the edge of the floor a distance equal to

the depth of the vertical channel members which support the side boarding. These vertical channels will later be notched through the edge of the floor and are supported by glueing to the flanges of the solebars.

Before fixing the two inner channels, cut the two bogie bolsters between the two solebars and glue these to the underside of the floor at the correct bogie centres. The two inner channels between the bolsters can now be fixed 12" apart. The two inner channels between the bolsters and the headstocks should be spread to give clearance for whatever couplers you intend to use. Trim the channels back flush with the ends of the floor and glue on to the ends of the floor and the channels, headstocks of 1/8" x 0.020" stripwood. Glue on two 3/32" square queen-post beams cut in between the channels at the correct centres and the basic underframe is complete.

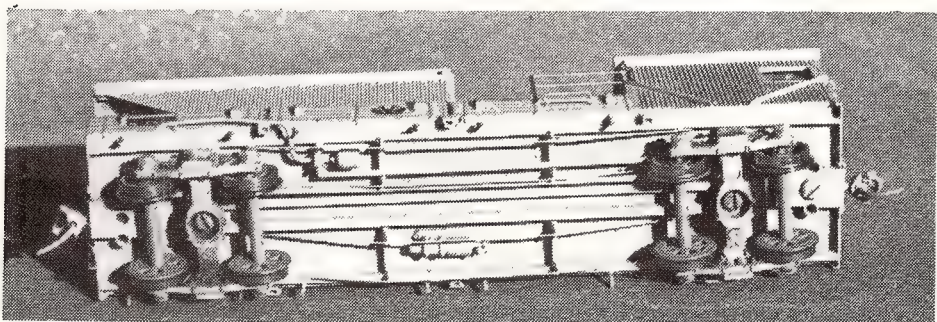
If you use Kadee, or any other bogies of American origin, and North-Eastern bolsters, the underside of the floor will be at the correct height for mounting Kadee couplers (thanks to N.M.R.A. standards). Carefully mark a vertical centreline on each headstock and mark out for and cut an opening through the headstocks for your couplings, trimming back to the underside of the floor with a file. Do not fix the couplers at this stage.

Set out the bogie centres 28'-0" apart on the centreline of the car, using dividers and a marking gauge. Extreme accuracy is required here as bogies mounted off-centre will make the car appear to run crab-wise relative to adjacent cars and the couplers will be forever off-centre. Drill the bolsters to receive the bogie mounting screws.

The Cabin

As originally constructed, the cabin at the 'A' end of the car was sheathed with 4" tongued, grooved and V-jointed boarding which in later years has been covered with a smooth faced sheeting, probably tempered hardboard. The A.B.L.O. layouts on which this model was to run are mainly representative of the end-of-steam, early-diesel period so I chose to construct the boarded style of cabin as being most appropriate to this era.

Construction begins by cutting the two sides of the cabin to size from 0.040" (1 mm)



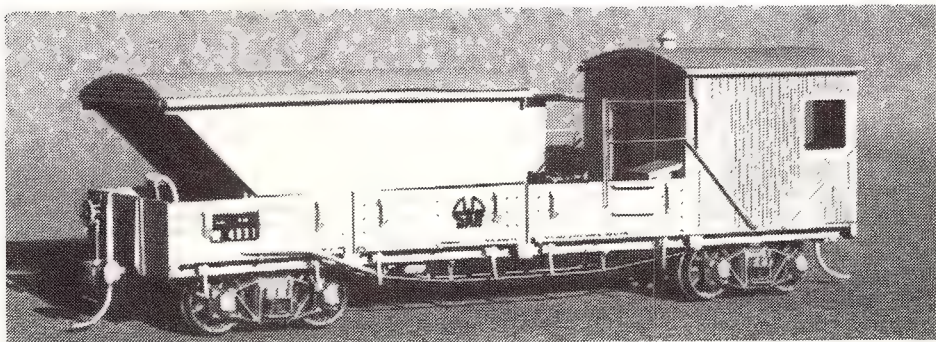
Basic underfloor detail as fitted by Kevin to his model. He added what he could see from the side view. The spray equipment and shunters' steps are yet to be added.

scribed sheathing 1/32" thick and glueing 1/16" x 1/16" corner posts to each end. Set out the two side windows and one door using a scale, dividers, square and a sharp pencil and cut these out with an 'Exacto' knife using a new blade. Take great care with the cutting as the window openings are close to the edge and the timber is easily split. Many light strokes are better than a few heavy strokes. Try to hold the knife to give a square edge to the retained boarding and a 'V' edge to the waste.

Form the window and door frames with 1/32" x 1/32" stripwood glued in flush with the outer face of the boarding. Use a slightly wider piece for the window sill, projecting just beyond the face of the boarding and set slightly sloping. Use a minimum amount of glue applied with a camel-hair brush. Try to avoid any excess glue filling the grooves of the boarding adjacent to the frames as this will show up after painting. The cabin side with the door can now be backed with a similar sized piece of 3/64" scribed sheathing 1/32" thick to simulate the wider boarding of the door. Cut a hole in this boarding slightly larger than the previously cut window to facilitate later fitting of glazing. This side will now be a total of 1/16" thick.

Cut two cabin ends from the 0.040" sheathing and form a door and the end window similarly to the sides. The ends should be the same height as the sides. Then cut a piece of North-Eastern end-block to the internal plan dimensions of the cabin for use as a sub-floor, remembering that you now have one side and one end 1/16" thick and the others 1/32" thick. From the same material cut two end-blocks to the required height, shape the tops of these to the inner profile of the hollow roof section, and glue one of these plumb and square on top of one end of the sub-floor section, first checking that the height is correct, i.e. deducting the thickness of the roof section. This end will be the inner or door end. Glue the two sides in position to the sub-floor and end, allowing enough overhang for the cabin ends, check the door end for final fit between the sides and glue this in position against the end-block. It will be necessary to cut small chamfers at the corners of the sub-floor to let the 1/16" x 1/16" corner posts fit in.

It will now be obvious that the other end block that we have made cannot be used in a similar position at the other end of the cabin as it will obscure the windows. Check the window end for final fit between the sides and glue this in position between the corner posts of the sides. Take the remaining end block and, using the door end as a guide, mark a horizontal line just above window head level and cut the end



block along this line. Discard the lower piece and glue the shaped upper piece inside the window end above the window and to the sides, ensuring that the overall height is the same at each end.

Cut small pieces of 3/64" scribed sheathing 1/32" thick and glue to the outer faces of the end blocks above the tops of the vertical boarding as a spandrel infilling to the roof ends; shape this to the inner profile of the roof. The boarding grooves should be horizontal. You will now have a quite strong and rigid cabin ready to receive the roof.

Cut the hollow roof section to a length just fractionally longer than the cabin to give a small overhang at each end as shown on the photographs, smooth the ends off, as they will ultimately be exposed and cut the width of the roof down with a razor plane, working equally from each side to match the overall width of the cabin. Ensure that the outer edges of the roof section finish up being vertical after planing. To these edges attach gutters constructed from 5/64" channel. Make the gutter stop-ends from thin card or styrene sheet glued on and lightly round off the outer bottom edge to simulate the shape of a typical 'D' eaves gutter.

Cut the corrugated iron roof sheeting from Campbell's corrugated aluminium to the exact length of the roof section and of a width to hang slightly into the gutters, so as to hide the joint between the gutter and the roof.

Form the corrugated sheeting to the approximate contour of the roof section by laying it on a pad consisting of several folded layers of cloth and gently rolling with the handle of your Exacto knife until the correct degree of curvature is obtained.

To fix the corrugated sheeting to the roof use a rubber based spray adhesive. I use 3-M brand spray adhesive for fragile items such as these. Simply lay them out on a sheet of news-

paper and spray on a good coat of the adhesive and allow it a few minutes to get tacky, then place it on the roof section and smooth into place with your fingers. The completed roof cannot be fixed to the cabin at this stage because the window glazing will have to be fixed inside the cabin after spray painting so just seal the inside of the roof, as later described, and set it aside to be finally glued in position after painting and glazing. A short flue with a chinaman's hat type cowl is fixed through the centreline of the roof in the position shown in the photograph.

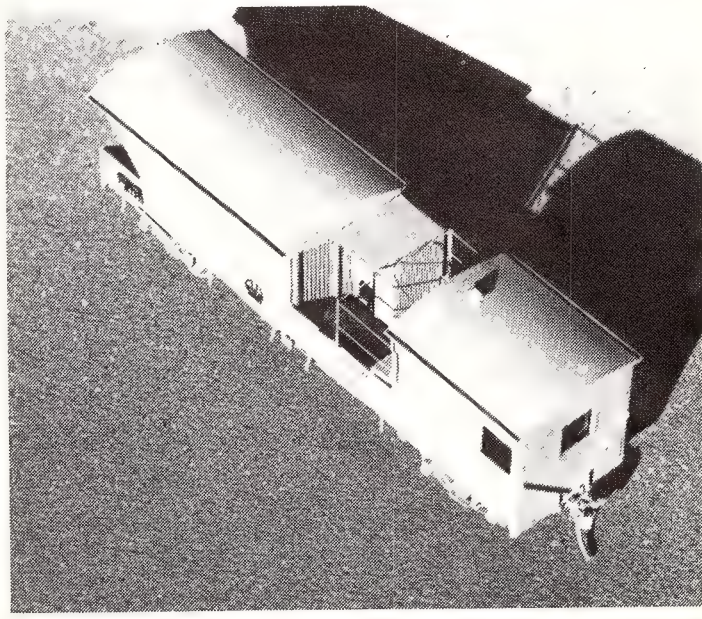
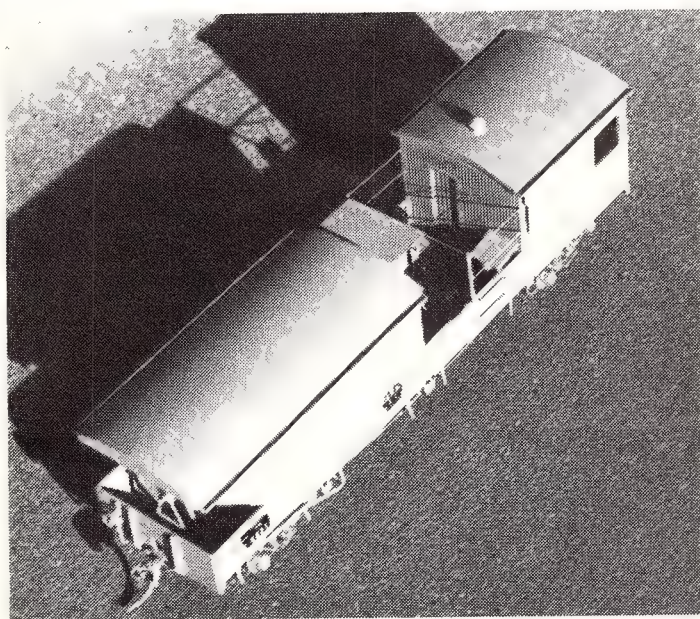
Glue the cabin in position on the 'A' end of the underframe and carry out any trimming or smoothing necessary to ensure a flush fit.

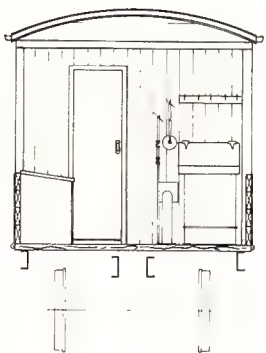
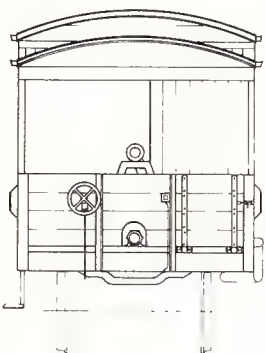
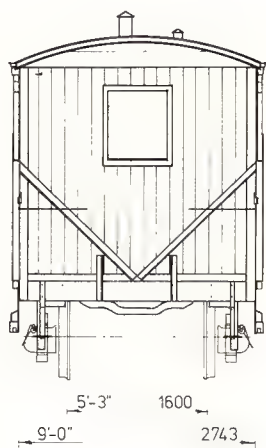
The Wagon Sides

The next operation is to make the wagon sides and these are cut from 3/32" scribed sheathing four planks high. Divide the side length of the car into four equal parts and mark the centres of the locations of the 5/64" channel posts. Note that the section abutting the cabin is shorter than the others. The posts are equal in height to the sum of the underframe channel, the floor and the sides. Cut four. Cut six lengths of siding to fit in between these posts allowing a little excess on the two outer ends, and glue up the two sides, each comprising three side sections with two posts in between. Note that the outer edges of the channel post flanges are flush with the outside face of the boards, so you will have to work with the pieces face downwards on a sheet of waxed lunch-wrap paper, aligning the top against a steel straight-edge as you work. After these have dried, turn them face up and remove any glue which may have filled up the grooves between the planks.

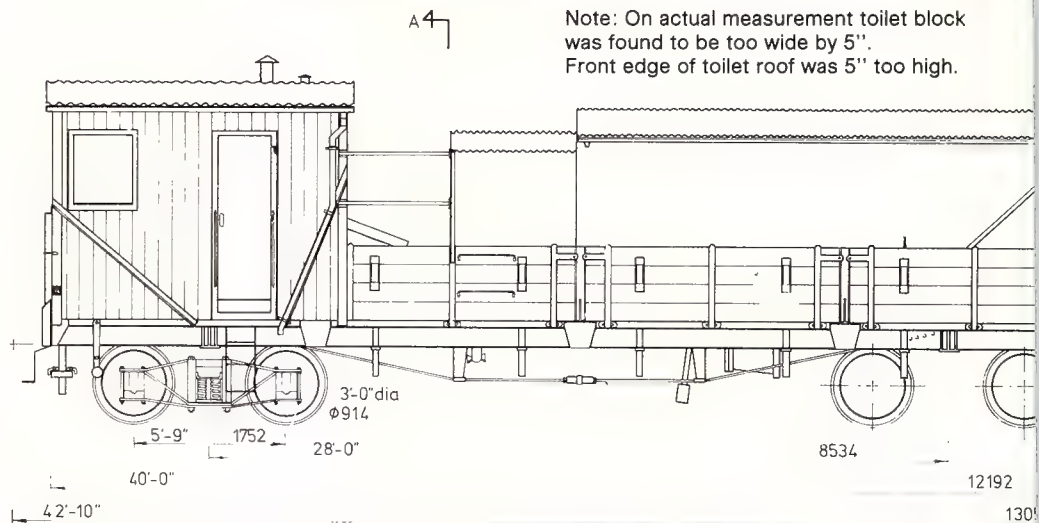
Lay the sides along the edge of the floor, locating the appropriate post on the centre line of the car and mark the edge of the floor for

Two roof views give some of the detail between the two large structures.

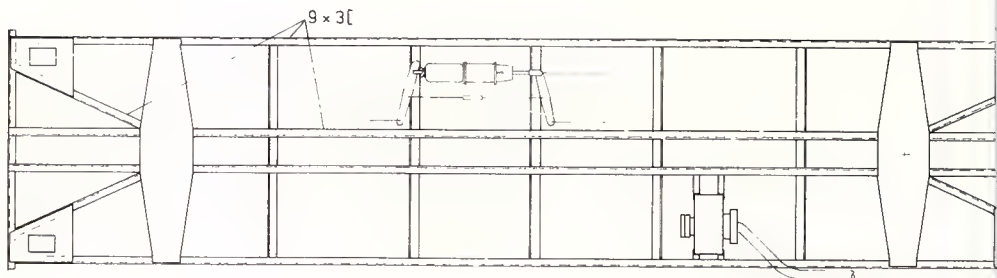




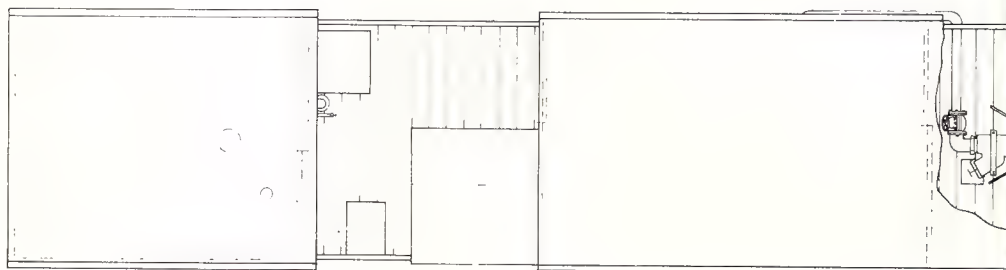
Section A



Note: On actual measurement toilet block was found to be too wide by 5". Front edge of toilet roof was 5" too high.



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0 1



PROTOTYPE NOTES

S.A.R. WEED POISON VEHICLE W4301 and POISON MIXING TANK TW4813

DRAWN R JOHNSON 15 JUN 80

The vehicle, W4031 that Kevin chose to model is the 'third generation' of SAR poison spray vans. Photos in early publications show several men pushing a four wheeled lightweight tank with spray boom attached. The next method was an Rx loco hauling a train of four wheeled, square bodied water tanks and a separate four wheeled spray car. In 1938 W4031 was issued to traffic and was a convert from a W class open wagon. (Refer AMRM Nov/Dec 1980 for an article).

Why poison the track? Obviously to get rid of weeds which are a fire hazard. But there are a few other advantages. Weeds on the rails cause wheel slips. Weeds interrupt the effec-

tive drainage of the track and thus help to cause subsidences through cuttings, etc. This can lead to derailments or at least damage to wagon contents which means added cost to the Railway.

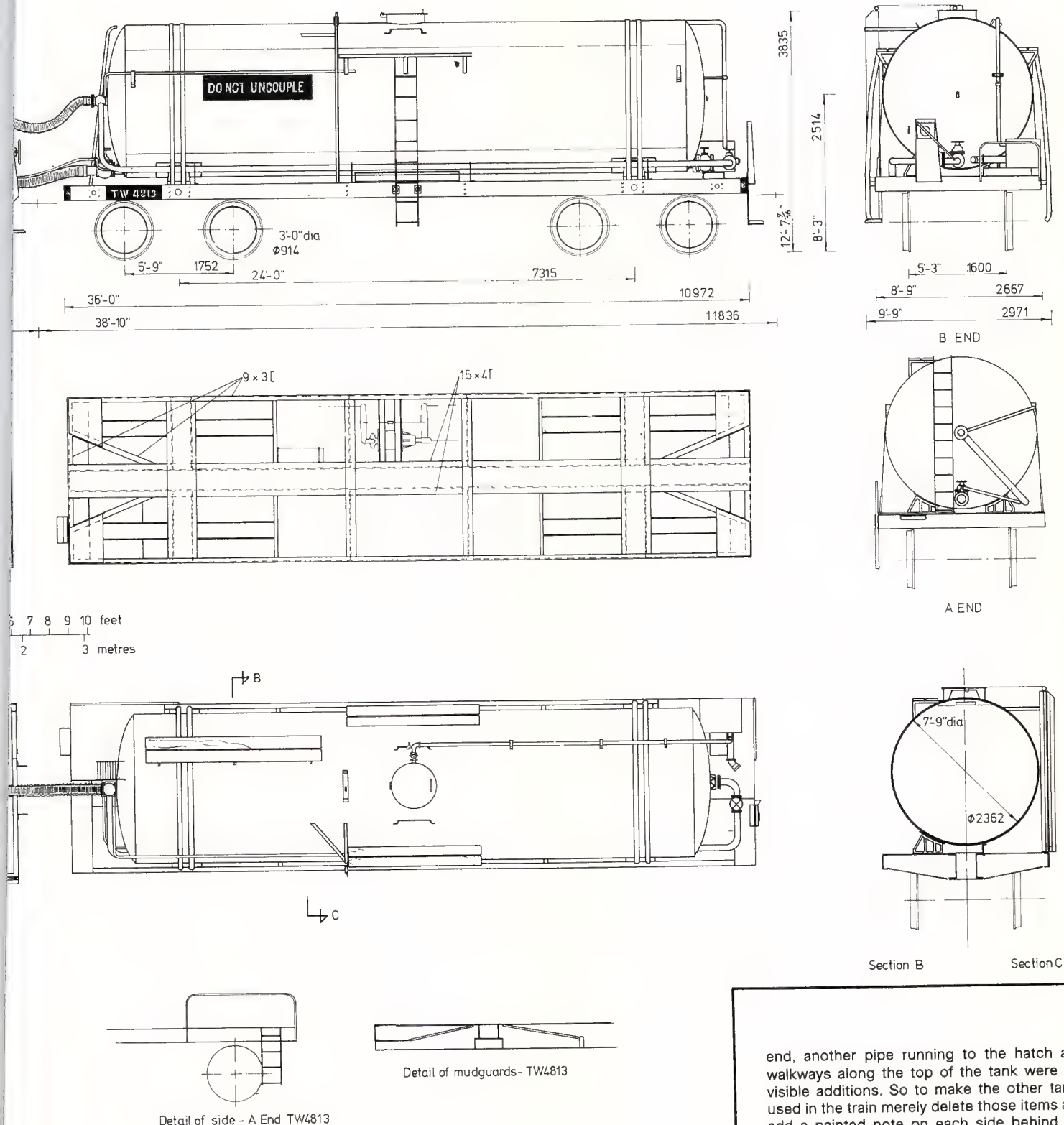
Early photos of W4031 show it in the then standard dark grey SAR colour scheme with the number in white painted onto the doors. It was built with only one cabin, being at the spray boom end, and it was built of tongue and grooved timber. Drums of poison were carried in the open wagon area.

Over the years more structures have been added and the cabin has been braced for more rigidity. The spray method has changed from a

boom across the track to various systems of nozzles. Kevin noticed a change in nozzle design during the model construction time.

Nowadays W4031 and the poison mixing tank TW4813 are rarely separated and the various hoses are left coupled up. When not in use the two vehicles are stored among other service vehicles at Mile End. When it is to be used a group of water tanks is added with the number, depending on the distance to be done between water fills.

Usual broad gauge train consist is ... 830 class engine — 8300 type brakevan — bogie type employees van — three to five 9000 gallon water tanks — TW4813 — W4031. This allows



the poison to be sprayed from the trailing vehicle. An exception is the suburban Grange line which lacks a run-around track at the terminus. Because of the distance involved a second 830 class engine is added at the rear so that an engine hauls the train in each direction. However this means that one engine travels through the spray. Speed is about 15 mph and the spray covers approx. ten feet either side of the line. All lines are poisoned once and sometimes twice per year.

W4031 can be fitted onto standard gauge bogies although its brake rigging does not conform with the design required of intersystem bogie exchange wagons. The lifting

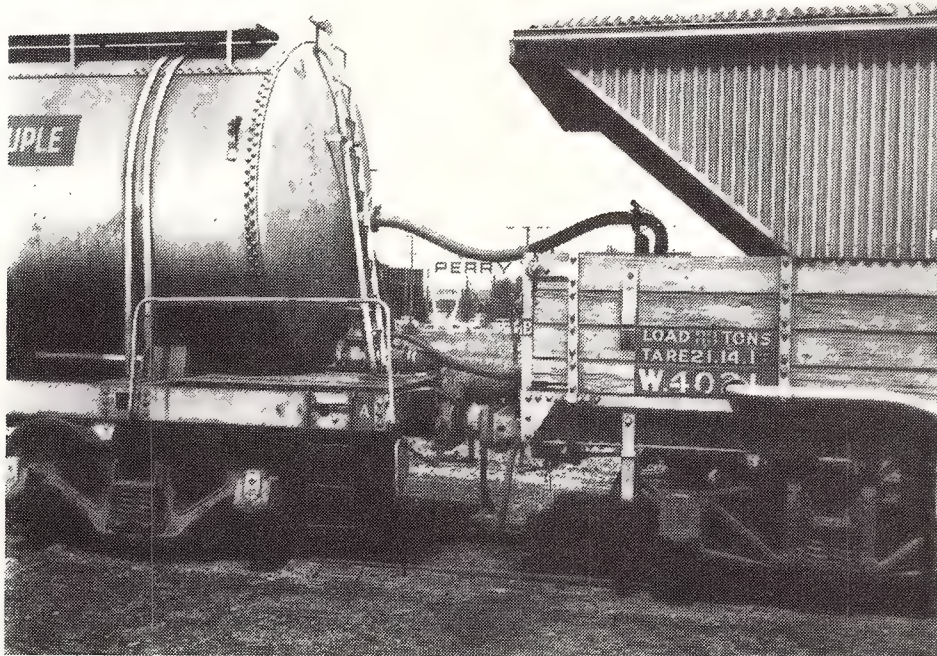
pads are welded onto the outside of the side sills and are visible above the bogies. Another group of tanks are used when on the Peterborough Division. The Port Lincoln Division has its own narrow gauge four wheeled poison spray van and tank wagons.

Kevin has not included TW4813 in his article because he has not yet finished a model of it. Roger included it in his plan because it is an integral part of the broad gauge spray train. The plan is of further use because the tank is a standard 9000 gallon 7'9" internal diameter water tank with several minor modifications. To convert it to mix poison a contents gauge with triangular support, extra pipes at the brake

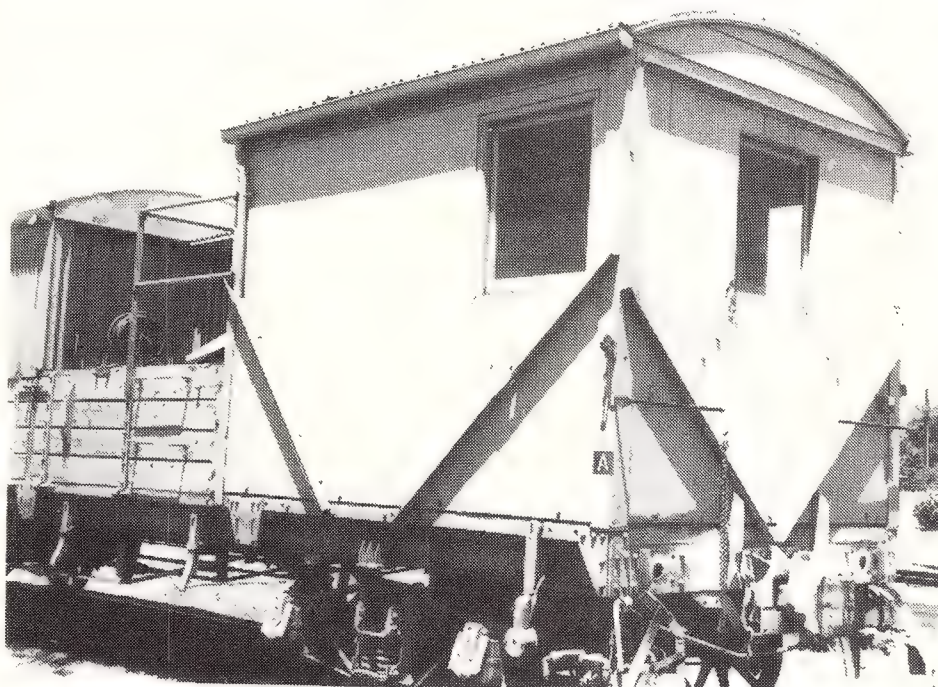
end, another pipe running to the hatch and walkways along the top of the tank were the visible additions. So to make the other tanks used in the train merely delete those items and add a painted note on each side behind the ladder. The words "WATER 9000 GALLONS" are in white on a black background. This is visible in the photos. Number sequence is in the group 4805 to 4831 except 7, 8, 10, 11, 15, 21, 23 and 24.

The plan has another use also. Most of the older fuel and oil tanks used on the broad gauge are of 7'9" internal diameter with an almost identical chassis (unless mounted on old flat wagons). Instead of a simple water hatch they have domes which are different to the type used on American models. Most have the unloading pipe mounted centrally between the bogies and across the track. Anyway, this plan with a few photos should enable you to model them.

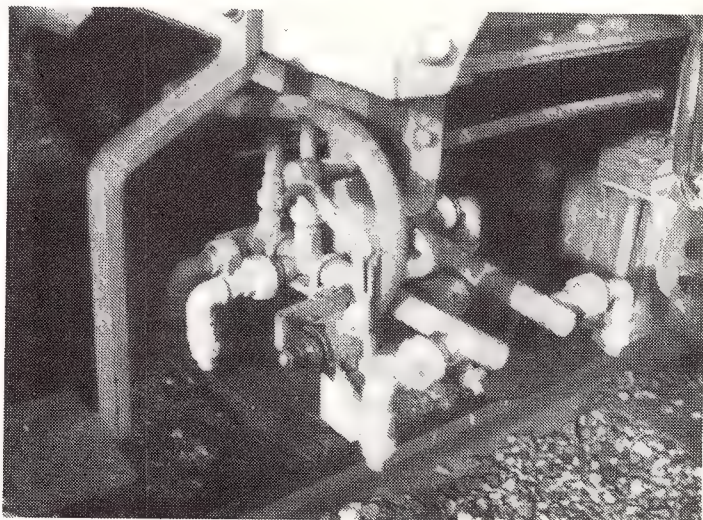
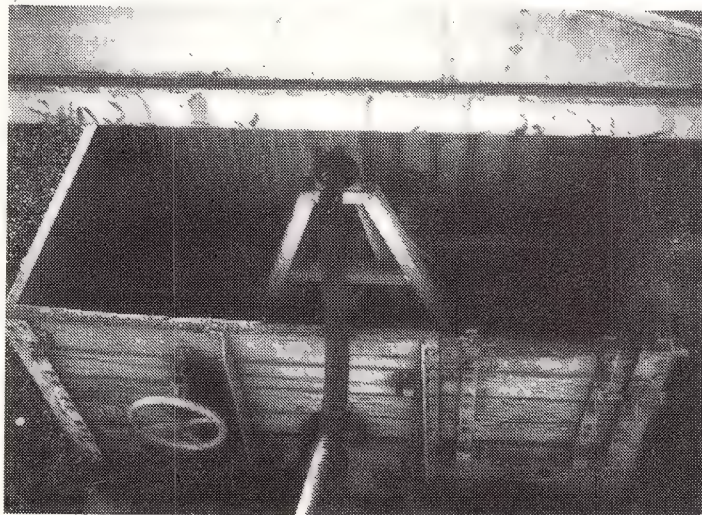
Phil Curnow.



Detail at the brake end showing the semi-permanent hose couplings to the poison mixing tank TW4813.



The plain sides of the re-clad cabin seem to lack some of the 'character' of the original.



and cut out notches for the posts to pass through. Cut each end of the sides to the correct length at the end and against the cabin and then glue each side in position. The bottom projection of the posts should just touch the flanges of the underframe channels and should be glued to them. You may wish to glue a small packing piece between these two members to give good stability to the posts. Cut the end piece of planking to fit between the sides and glue in place.

The Spray Equipment Housing

This is the next item to receive our attention. It is constructed using end block for the false floor and two ends, reduced in width to fit between the car sides and with the top of the ends shaped to roof profile.

Note here that, contrary to S.A.R. diagram CD-288, the two roofs are not level. Inspection of the photographs will reveal that the roof of the spray equipment housing is at least one foot lower than the "A" end cabin roof. Glue the two end blocks to the false floor and cut from 1/32" thick scrap siding material, two sides to form a basis for attaching the corrugated siding. These sides should extend only from above the level of the planked sides to eaves level. Glue on to the outer face of each end a full width lamination of 3/64" scribed boarding to simulate the vertical boarding of the end doors and shape the top as required.

Cut a piece of hollow roof section to length, noting that the overhang continues to the end of the car, and plane this back to the required width. Before fixing the roof seal all of the inside surfaces.

Weighting the Model

At this stage some thought should be given to the ultimate weight of the car. N.M.R.A. R.P.20.1 indicates that a 40'-0" long car, as is this one, should weigh 3.25 ounces. On my layout I have standardised bogie freight car weight at 3 ounces which seems to provide an optimum level of performance and stability. Whatever weight you decide to use, put all the pieces that you have constructed to date on Mum's kitchen scales, not forgetting the trucks and couplers and measure how much extra weight is required. Allow a feather-weight for detail to be added later. The extra weight should be spaced as equally as possible over each bogie, you can use sheet lead or a slug of

Below left: Looking down onto the brake end and shows the end bulkhead door, stand for one of the connecting hoses and metal clad door behind.

Below right: The spray nozzle and shunter step. Perhaps you can see why Kevin hasn't included this on his model. Try making two of these.

type metal or whatever. When you have made up a couple of weights, put it all back on the scales and check again. When you are satisfied, glue one of the weights to the floor of each cabin with a dollop of 'Pliobond'.

Adding the Details

The roof of the spray equipment housing can now be glued in position and the edges finally trimmed flush with the sides. Make up two roof end spandrel pieces as visible in the photographs, glue in position against the outer edges of the roof and shape back to roof profile.

Using $1/32'' \times 1/32''$ stripwood glue on door frames at each end. Make up and attach eaves gutters as before. Each of these has a small "pop" discharging the water away from the car sides, a short length of wire will do for these. Underneath the roof overhang and flush with the outer faces of the sides, glue in a $1/32'' \times 1/32''$ strip to give top stability and a glueing surface to the corrugated sides. Fashion the toilet from a solid block of wood, glue boarding on the front and glue in position against the inner end wall and we are ready to apply the corrugated sheeting.

The roof application has already been described and that to the walls follows similar methods. The sheeting to the outer and inner ends is straightforward, merely requiring to be cut between the door frames and the edges, that at the outer end will need to be cut with a pair of scissors to a curve to fit up under the roof. Similarly sheet the inner faces of the toilet.

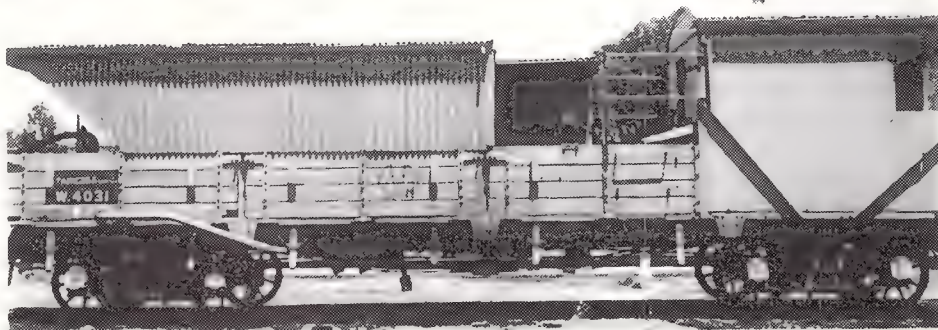
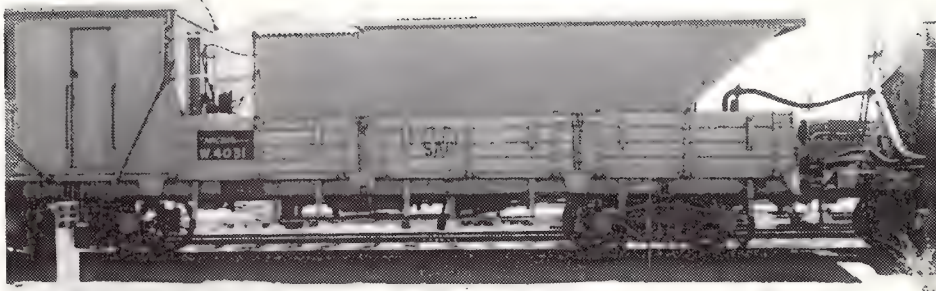
The sheeting to the sides must be accurately cut to fit between the top of the planked sides and the underside of the gutter. Refer to the photographs and cut the raking sides under the end overhang back to the junction of the end wall and the planked sides, allowing for the short horizontal piece at the eaves. Extend one side enough to cover the back of the toilet. Allow for wrap-arounds at corners where necessary. When glueing the sides in position take great care of the projecting sides of the overhang. These are very fragile and if bent or distorted, will mar the final appearance of the model. Cut a piece of corrugated material for the nearly flat roof of the toilet. Glue it in position, turn over and glue to the underside of the roof overhang, three pieces of $1/32'' \times 1/32''$ stripwood for purlins as shown in the photographs.

The spray equipment housing is now complete and to avoid any damage by subsequent handling, it is best not to fix it in position now but to put it carefully aside and fix it later when detailing is complete.

Our model is now in a condition that it may be test run if you so desire. Attach the couplers and bogies, set the cabin roof and the spray equipment housing in position, couple-up your favourite locomotive and a brake van and give it a run around your layout. Any leans, lurches, crabbing or lack of plumb, square or horizontal lines should be critically searched for and corrected before adding any further detail.

When attaching the couplers it will be observed that the 'A' end coupler screw will get a good grip in the sub-floor of the cabin but any screw fixing at the other end will be visible on the exposed floor. This coupler should be attached by fixing the upper part of the coupler box to the underside of the floor with a dab of 'Pliobond' and assembling the coupler 'in-situ' after this has dried. Check the couplers for height after final fixing. Kadee make the KD9 coupler pocket for this type of job.

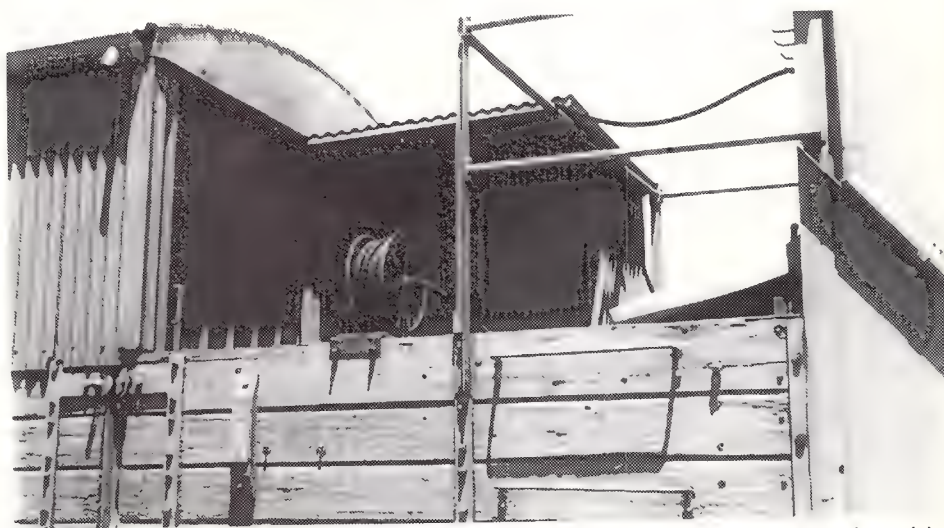
The correct bogies for this unit are the arch bar type with spoked wheels at 5'-9" centres. I used Kadee No. 501 arch bar bogies with Berg's 10.5 mm diameter spoked wheels which can be fitted to the bogies without any modification. Check the bogies to ensure that the



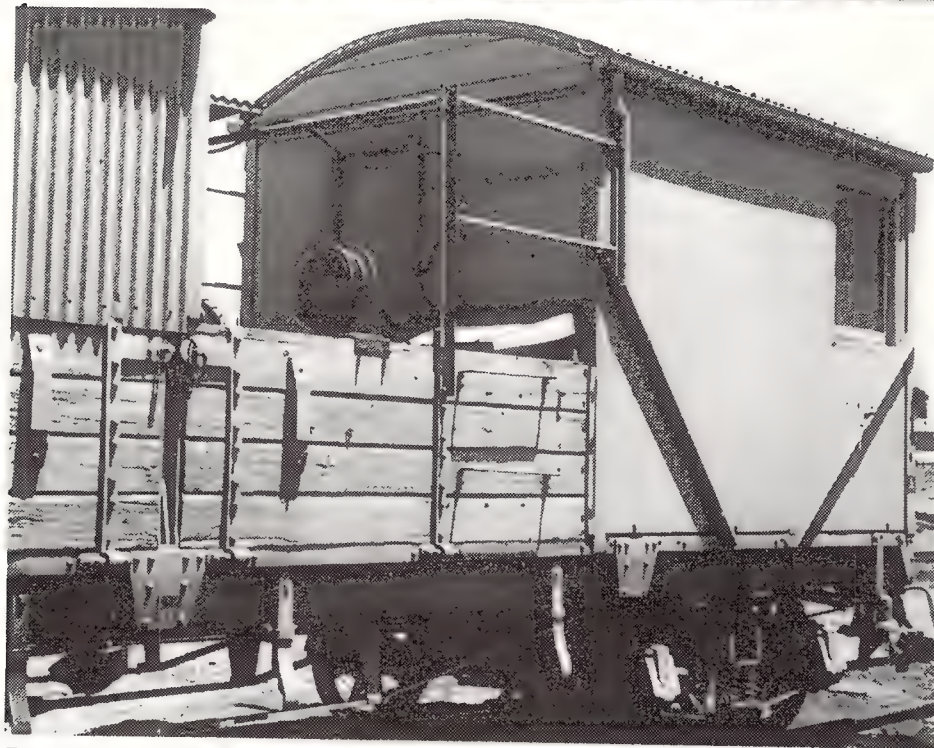
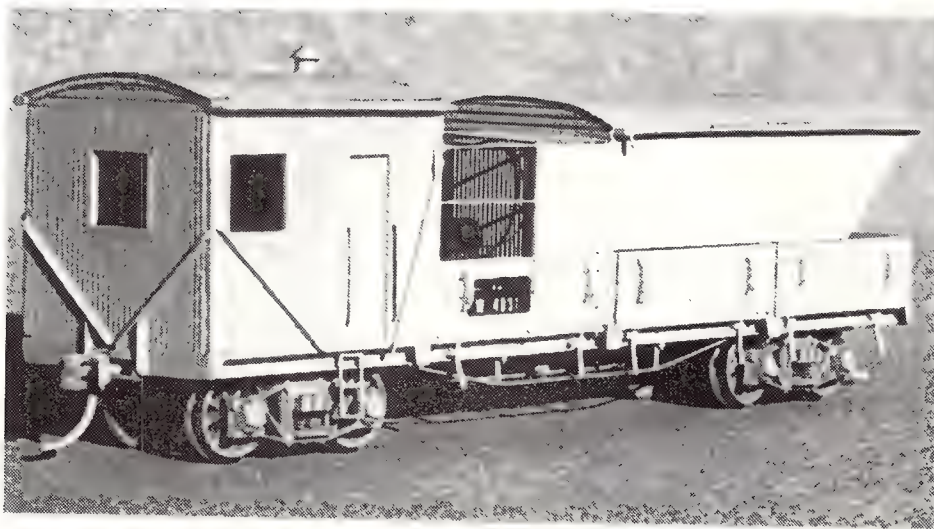
These two side views were taken in 1977 after the operator's cabin had been reclad and the tare weight had been converted to metric values.



In 1973 the cab was still vertical tongue and groove boards. The metal bracing around the cabin was added in the early 1960s. Note the painted panel 'weed poison van'.



A view from trackside of detail between the sheds. Note the different types of metal used . . . plain, corrugated and ridges.



The inner end of the cabin viewed from track level in 1977.



Part of the underfloor detail. The pipe at the left runs outside the sidesill then connects to the tank hoses via the stand at the brake end. The lettering is white on black and indicates that the triple valve, brake check and height check were done at Islington in May 1980. At right is some detail alongside the cabin doorway.



side frames are free of all casting flash and that the bolster slides freely in the side frames, remove the Kadee wheels and set these aside for future use in other projects. Attach a strip of masking tape to the inner faces of the side frames to keep paint away from the axle holes, loop a length of thin wire through the bolster mounting holes and spray-paint these grey when painting the wagon.

Prepare the spoked wheels for spraying by first checking that they are correctly gauged and then cutting a piece of masking tape to the required width and wrapping it around the wheel treads. You can also remove paint from the treads of metal wheels with MEK but you will lose it from the edges of the rim also. Place the wheel sets on a strip of double-sided cellulose tape on a convenient board as a base and spray these.

As soon as the paint is touch-dry, work the bolster up and down in the side frames to clear away any paint which could later impair their proper function and press the needle points of the axle ends gently in to the end grain of a block of softwood and rotate slightly to remove all paint from the bearing surfaces. Strip the tape from the side frames and the wheel treads and puff a little powdered graphite or ground Teflon into the axle holes. Re-insert the wheelsets and you will have the free-est running trucks ever and without any oil to finish up on your rails. Be warned, however, that if your yards and sidings are not truly horizontal you will have difficulty in getting your cars to stay put. Secure the bogies to the bolsters with No. 2 self-tapping screws.

If you wish to paint the couplers, attach them to the car prior to spraying and afterwards work the coupler from side to side to clean away any paint which may have penetrated and rub a little graphite or 'drylube' on to the outer striking faces of the knuckles to ensure free coupling.

The Fiddly Bits

The basic car is now completed and the remaining task is mainly of adding the details. The sequence of this work is important inasmuch as the finer, more delicate details should be left to last to avoid damage to these by excessive handling. I will describe these various tasks in the order in which I applied them but you may proceed in any order that you wish.

On the open deck in the middle of the car and standing against the cabin is a steel 44 gallon drum with a sheet iron cover hinged against the adjacent cabin wall. This was easily simulated with a Campbell's wooden oil drum glued to the deck and covered with a piece of shim brass sheet, turned down at both sides and glued to the top of the drum and to the wall.

On the opposite side of this open area is a small timber cupboard, of a size and position as shown on the plan and sheathed on all sides with vertical, tongued, grooved and V-jointed boarding. A similar top is sloped towards the centre of the car and the door is supported on two 'T' hinges almost as wide as the door itself. This is constructed from a block of wood faced with 0.040" grooved sheeting, the hinges being cut from paper and all glued in position. The top of this cupboard supports one of the side hoses.

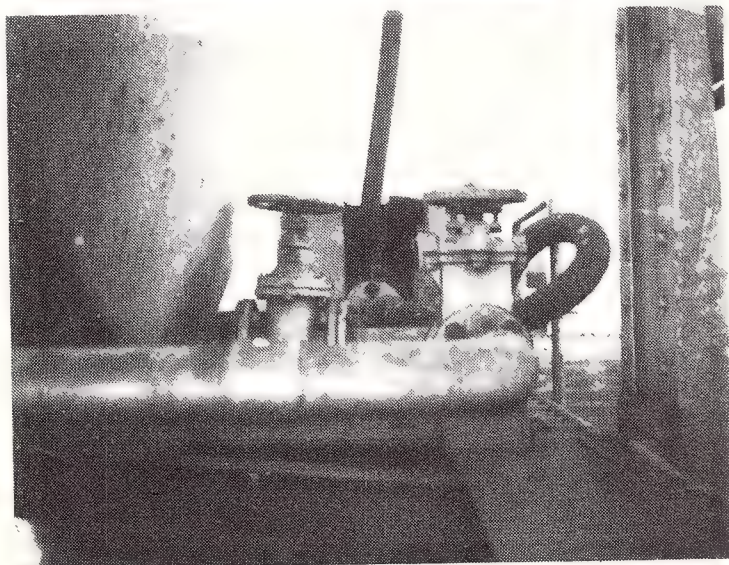
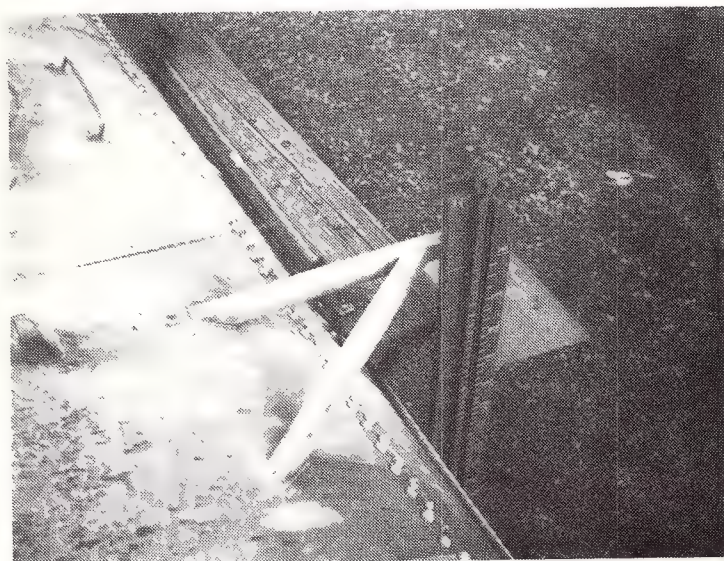
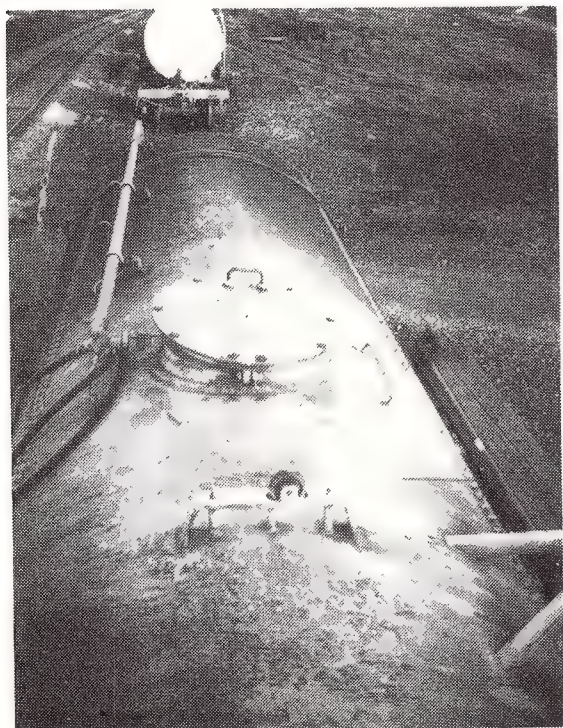
The handbrake wheel is a Kemtron 632, four-spoke plastic handwheel with a hat shaped bracket bent from a strip of brass and with a vertical brass wire carried down and under the end sill as the brake operating rod. Secure the wheel to the bracket and to the end with a pin and 'Zap' (A.C.C. type glue) the whole assembly in position.

The 'A' end cabin is braced with $1/32" \times 1/32"$ angles in the positions shown and fitted into two of these are the 2" downpipes which are constructed from brass wire approximately 0.026" thick, bent to shape and fitted at the top into holes drilled in the roof gutter. I would advise that these wires be attached with minute dabs of 'Pliobond' or 'Tarzan's Grip' as the use of 'Zap' here will tend to fill the grooves in the boarding.



Side view of TW4813.

The four photos below show details of mixing tank TW4813. The filler hatch, contents gauge and piping at the hand brake end are shown. A standard water tank has the same filler hatch.



At the base of each of the channel posts supporting the sides is a steel plate gusset securing these posts to the underframe channel. I cut the gussets from a sheet of Slater's 'Plasticard' pre-embossed with rivets of different sizes and spacings. These were cut across a double row of rivet heads, tapered at the sides as shown and secured to the bottom of the posts with M.E.K. (Methyl Ethyl Ketone).

The hinges to the drop sides were cut from paper and glued on with P.V.A. The striking blocks were cut from 1/32" x 1/32" stripwood, bevelled at each end and similarly glued on and the spring stops at the bottom were cut from strip brass 'Zapped' on to a small block of wood shaped to fit into the outer channel of the underframe.

The four rows of truss rod bracing were made of eight 'Tomalco' T-1010 12" queenposts, 'Zapped' into the queenpost beams previously described and the rods simulated with Nylon monofilament fishing line passed through holes drilled through the floor in the appropriate positions, tied off inside the cabin and with a drop of 'Zap' where passing over the queenposts. Do not put any more tension on the Nylon line than that necessary to ensure straight lines. You will have to cut a small groove in the bottom of the Spray Equipment Housing floor to allow it to sit down over the Nylon line.

In view of the crowded nature of the underfloor detail, I decided not to include full brake rodding but merely fitted a Walther's diecast Westinghouse 'KC' brake cylinder 'Zapped' to the underside of the floor.

Examination of the photographs indicate that the poison car is connected by two hoses at the 'B' end to the adjacent, permanently coupled, tank car. One, just above floor level through a 12" diameter opening cut in the end and, secondly, above the top of the end to a 4" pipe supported on an 'A' frame constructed of 3" x 3" steel angle welded together and bolted to the floor in the position shown in the diagram. Both of these connections are made with flexible rubber hoses of about 4" diameter.

Within the car the upper pipe drops from the 'A' frame to beneath the floor and runs alongside the inner chassis channel and up into the 'A' end cabin hard against the inner wall. This pipe should come through the floor at a point to clear the coupler box and turn up into the cabin to clear the bogie wheel at this end. The lower pipe runs above floor level to the outer end wall of the spray equipment housing, turns across the door in this wall, passes out through a hole in the side just below the number board as shown in the photos and is bent down and under the floor just inboard of the wheel and into a centrifugal pump secured between the inner and outer underframe channels. From the output side of the pump a 6" pipe runs back and up into the 'A' end cabin alongside the upper pipe. A non-return valve and a wheel operated gate valve are fitted to this pipe where it passes across the outer wall of the spray equipment housing. All piping is in galvanised wrought iron tubing with flanged and bolted connections with the exception of the pipe exposed on the outside face of the car which has been bent to shape.

To model this pipework I purchased from the Model Dockyard Pty. Ltd. a Scale Pipeline Parts Kit (5A) which contains an assortment of plastic pipes of the appropriate diameters with flanged bends, junctions, etc., and, amazingly, a centrifugal pump. However, I used brass wire for the pipe exposed on the side of the car as it was easier to bend to shape.

Handgrabs were bent from bronze wire and the pipe and angle framework in the open centre section fabricated from 0.013" wire and 1/32" x 1/32" brass angle, soldered together and 'Zapped' into position. The steps under the side door are cut from brass ladder stock



The chassis structure of TW4813 is the same as TW4802. This tank is also rivetted but has solid tank supports, a small pipe at each end of the tank and rides on bar frame bogies. The tank is lettered near the side ladder in white on a black background 'water 9000 gallons'. Photo at Terowie in 1970.



Doug Colquhoun found W4031 at Mile End in 1952. At this time it had only one structure being the A end cabin without side bracing. The spray equipment was different as a tap arrangement is fitted in each window sill. The wagon is still fitted with buffers and is painted dark grey with the number in white without the black background as this was used after the change to light grey. Looks as though several drums are in the tray section.

and pushed into holes drilled up into the floor.

The hand spray hoses on each side are just the ordinary domestic garden variety obtainable in most hardware stores. The frames can be simulated by bending to shape from a single piece of wire and joining at the ends with a dab of solder. The reels I fabricated from two of the Kemtron brake wheels we have mentioned before and the hose from 6 lbs. monofilament nylon fishing line. These were separately painted black and 'Zapped' into position after the car was painted but before 'Dullcoting'. One reel sits on the small cupboard in the open central area and the other will require a small brace from inside the side of the car to its inner edge.

You may continue adding detail to the limits of your ability or patience. I reached mine here.

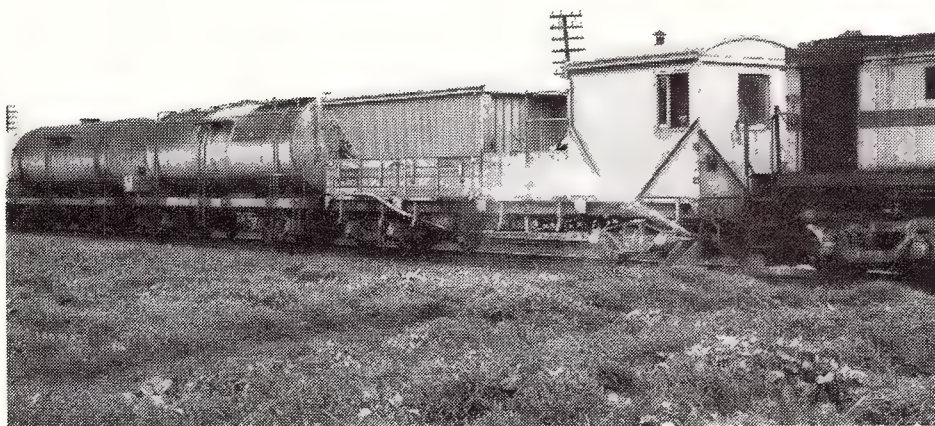
Painting — The Most Important Step

We now approach the final and, in my

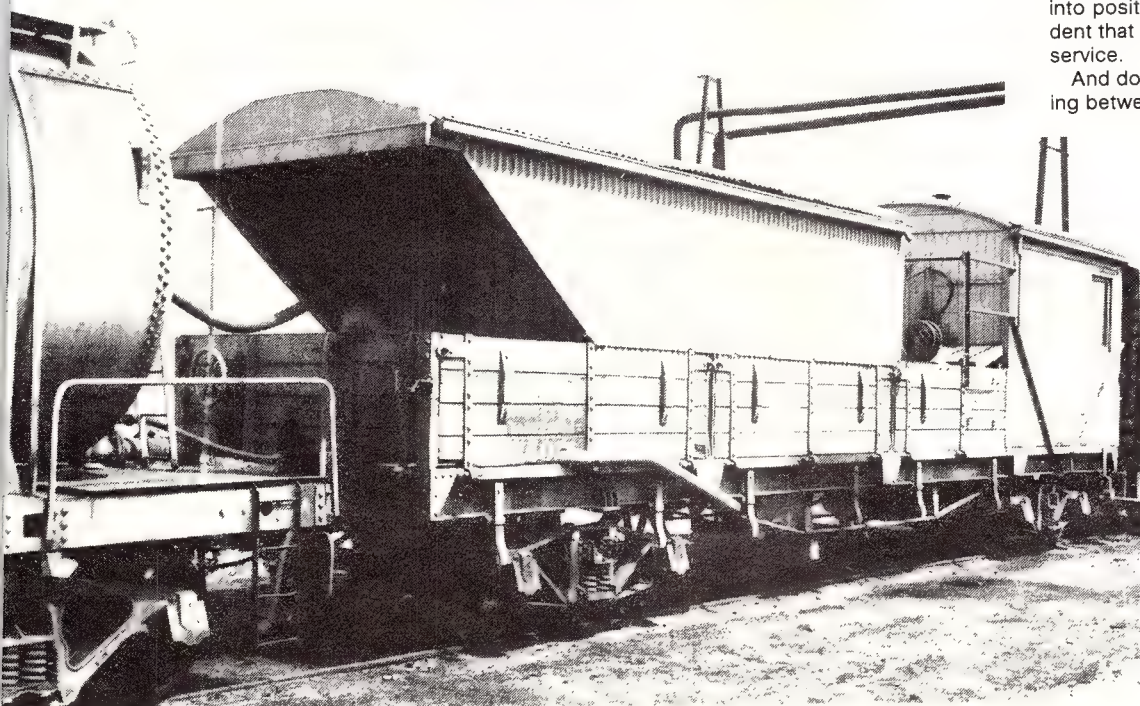
opinion, the most important stage of model construction, that is the painting and finishing stage. I am always prepared to spend infinite time and toil on these operations as a slapdash attitude here can make a well-built wagon look like a rough toy and not the professional looking model that it could be.

I have already described the painting of the bogies and couplers so those need not be referred to again, but a few preliminary words must be said about sealing.

Any cellular material, such as wood, is subject to dimensional instability with changes in moisture content. This means that all wood parts will expand or shrink with atmospheric changes of humidity and, if painted on one side only, will warp. This requires that all cabin sides, floors, roofs, etc. must be painted (or sealed) internally as well as externally or warping is inevitable. This internal painting or sealing should be carried out progressively on



These two photos show the consist of the poison train used on the Grange Line. As mentioned in the text there is no loop at Grange station so a diesel is attached at each end. Seen here is the 1980 return run with 830 leading and 845 trailing as poison is sprayed through the North Parklands area.



W4031 was stabled on one of the service tracks in the Mile End Loco Depot area when photographed in 1973.

any areas which are inaccessible on completion.

Prepare the wagon by brushing all fluff and other detritus away with a fine brush. Use a scribe or an Exacto knife point to clear all excess glue, etc. from all boarding grooves, angles, corners, gutters and the like. Paper off any rough grain, dust over finally and wrap in a piece of 'Gladwrap' until you are ready to paint. The corrugated aluminium roofing and siding have poor paint adhesion, these should be degreased with hydrocarbon solvents or detergent prior to glueing. In preparation for painting, treat these surfaces with Floquil 'Metal-Prep' or a similar etching solution, remembering that you will not be able to flush the solution off with water. Use a small, wet piece of cotton wool and swab it off without wetting any of the woodwork.

The S.A.R. changed the colour of the grey wagon paint in the early 1960's. If you are modelling a period prior to this you can paint your model with a darkened Floquil Reefer Grey (RR12). For wagons later than this period, make up a blend of Reefer Grey and Reefer White (RR11) in the proportion of two parts Grey to one part White.

To hold the model while spraying, cut a piece of medium gauge wire about 18" long, bend to a 'U' shape and in each end, form a small loop of a size suitable to take your bogie mounting screws. Remove the bogies and use these screws to secure your wire loop to the bolsters. This will give you a handle to hold the car with while spraying and can be used later to hang it upside down to dry.

Spray the wagon and the Spray Equipment Housing separately ensuring that you get good spray penetration around the 44 gallon drum in the open centre section. A bit of brush touch-up work may be necessary here, then set the various parts aside to dry in a dust-free atmosphere.

The sides of the car are too fragile to permit the use of 'Letraset' for the numbers so you will have to use decals. With steady hand, paint the lettering panels black for a height of two boards and for a length between a hinge and a side block in the positions shown on the photos and apply numbers of the appropriate size. Apply the S.A.R. black logo if you wish. Apply any weathering you may wish to use.

Give the various parts a coat of Testor's 'Dullcote' or whatever dulling agent you use, cut window glazing from clear acetate sheeting and glue in position from the inside. Glue the Spray Equipment Housing and the cabin roof into position and notify the Traffic Superintendent that another wagon is ready to be put into service.

And don't let me see any more weeds growing between the rails on your layout.

AUSTRALIAN RAILWAY SIGNALLING

Seventh in a series by Arthur Perry

"AUTOMATIC" CROSSING LOOPS

"Automatic" crossing loops do not operate fully automatically, only their "Home" signals. In all cases electric staff instruments are used, not CTC working. N.S.W. and South Australia's Peterborough-Salisbury section provide us with typical variations.

N.S.W. Standard Unattended Crossing Loop:

Brogan's Creek on the Mudgee/Gwabegar line until recently had the last example of this once common form of crossing loop in N.S.W. It is distinguished by a "safety siding" or "over-run" at the departure end of each loop road, which is unidirectional in operation, allowing two trains to arrive in the crossing loop simultaneously. But this layout restricts trains running-through as they must negotiate crossovers, and overtaking moves were complicated by requiring the first train to run through the crossing, then setback into the wrong road.

A signal-box at each end of the loop mechanically operated the "Starting" signal and points at that end and housed the electric staff instrument for the adjacent section, which was equipped for auto' working. The power-operated "Home" signals were normally at

Previous articles in this series are: —

An introduction to Railway Signalling
Railway Signalling Terminology
Auto Single Light Signalling
Auto Two Light Signalling
Mechanical Signalling
Train Order Working

Mar/Apr 79

Jul/Aug 79

Sep/Oct 79

Nov/Dec 79

May/Jun 80

Mar/Apr 81

"stop" and, providing the road to be entered was unoccupied, the points at both ends of the loop were in the correct position, and there were no defects, the "Home" would clear for an approaching train once it reached a relatively short track-circuit just before the signal. Passing the signal the train operated a second track-circuit which returned the "Home" to stop.

As the loco' passed the first signal-box the driver's assistant placed the staff for the section they had just left either into a "staff receptacle" or on a "staff sling hook" beside the track. The guard alighted at the signal-box as his van passed it, and once the train was clear inside the loop he would place the staff into its instrument and give the "train arrival" to the

station in the rear.

If the train was ready to depart the driver's assistant proceeded to the signal-box at the departure end of the loop and, if he could obtain a staff for the section ahead, released the locking with it, set the road and cleared the mechanical "Starting" signal to leave the loop. The staff was then removed from the lock on the lever-frame and handed to the driver, permitting him to draw his train ahead into the section, just clear of the loop. The guard now restored the "Starting" signal to stop, restored the road "normal" behind his train, gave the "train departure" signal on the staff instrument bell to the station ahead, locked-up the signal-box, boarded his van and finally gave the driver the "all right" signal to proceed.

With "light-engines" the driver's assistant did the guard's job as well, while on diesel railcars the guard did the driver's assistant's job as well as his own.

N.S.W. Automatic Crossing Loops:

As can be seen in Figs. 2 & 3 a more orthodox layout is now used for N.S.W. crossing loops, with two minor variations in arrangement and a different regulation covering each

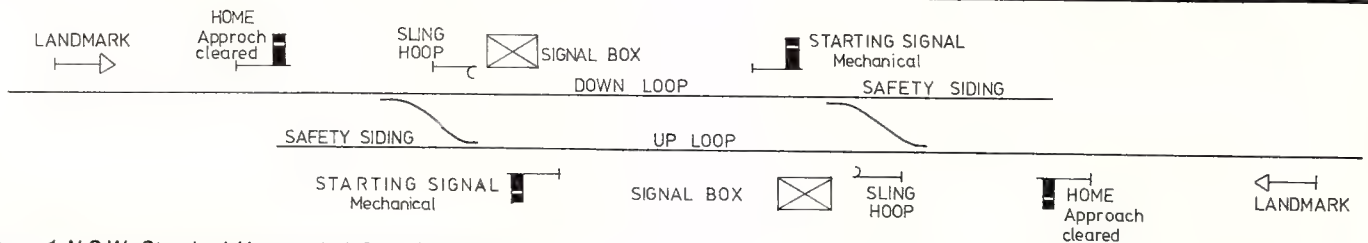


Figure 1 N.S.W. Standard Unattended Crossing Loop

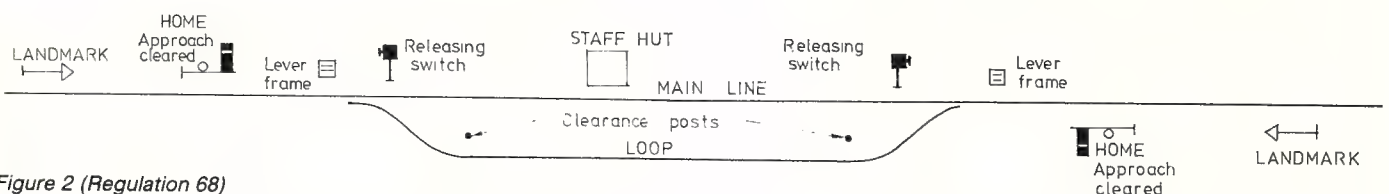


Figure 2 (Regulation 68)

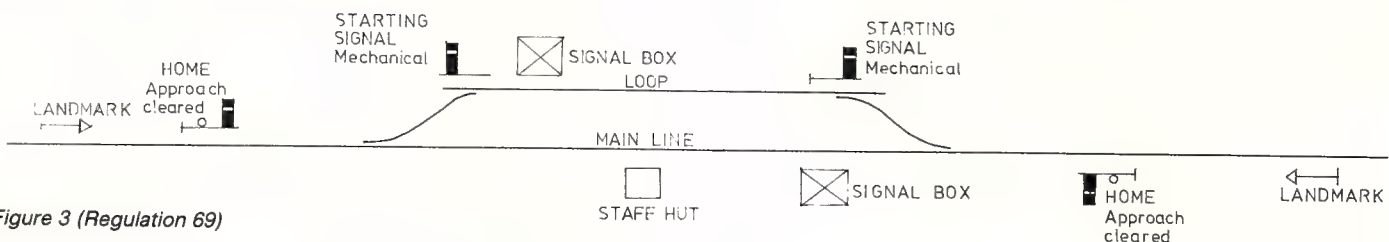


Figure 3 (Regulation 69)

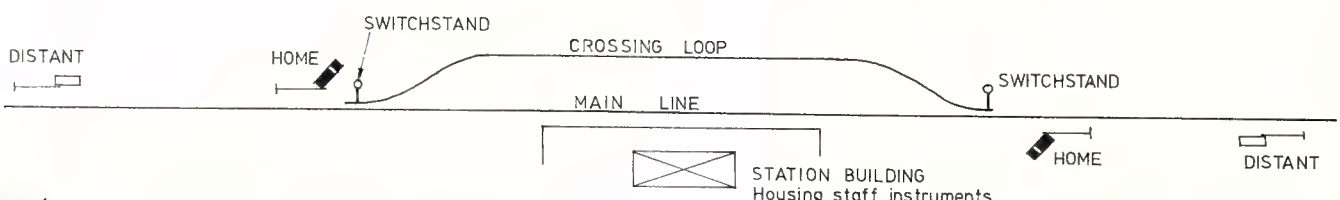


Figure 4

case. It will be noted in both cases that the road is set straight through the mainline from both directions, and there are no safety sidings to permit simultaneous entry from both directions. This also requires that as soon as one train passes any Landmark signal the "Home" signal for the opposite direction will be held at stop and its "Home" will clear for it to enter the loop's mainline. Two trains simultaneously passing their Landmarks prevents any "Home" from clearing.

In both cases the hut housing the staff instruments for both sections either side of the crossing loop is midway through the loop. A special lock and key is provided in it for emergencies due to equipment failures. Removal of the key ensures both "Home" signals remain at stop as the key can release the locking at both ends of the loop.

In Fig. 2 there is a lever-frame and releasing-switch at each end of the loop. The key is released from the switch by the operation of the staff for the section at that end of the loop in either a lower-lock on the releasing-switch or a drawer-lock. The key unlocks the lever-frame at that end if it is required to enter or leave the loop road, and operation of the points for the loop road holds the "Home" signals at stop.

In Fig. 3 an electrically locked "releasing lever" is provided in each signal-box, plus an "emergency lever" which can be unlocked by the key from the staff hut in the event of failure.

In obtaining the key from the hut both releasing-levers are locked electrically and only the key itself can overcome this.

In both Figs. 2 & 3 once a train has pulled into the clear on the loop road and points, etc. restored normal the "Home" signals should clear normally for an approaching train. This briefly sums up the basics of N.S.W. crossing loops. Just don't go crossing two trains simultaneously using Figs. 2 & 3 if you truly claim to "model" railways.

South Australia:

Somewhat similar crossing-loops exist on the Peterborough-Adelaide line, using upper-quadrant signals (some other S.A. lines use searchlight signals), Fig. 4.

Usually trains from both directions can enter the mainline of the loop if there is no other train to be crossed. But if a crossing is to be made the first train to arrive either runs into the mainline and stops, or stops at the "Home" signal and sets the switches into the crossing-loop if the next train has priority in using the mainline. The first train then pulls clear into the loop setting it normal behind it permitting the next train to continue into or through the mainline road, staffs being exchanged during the movement.

With no trains in a crossing station the "Home" would be at 45° (caution) and "Distant" at 90° (clear) for trains to approach from

either direction. The moment a train occupies the "approach track" circuit the "Distant" for the opposite direction would go to caution and its "Home" to stop. This permits a rapid entry to the crossing station when no other train is to be crossed or has yet to arrive, while providing adequate protection against "head-on" collisions if rules are obeyed. Once a train is clear in the crossing loop and the road set through the mainline the signals will clear as though no train was present at the crossing station, the mainline being clear. This permits one train in one direction to be crossed by several in the opposite direction.

Miniature electric staff token system of working would be in force and the usual passing of staffs through the instruments and exchanging of staffs would be required, the staff instruments being housed in the station building about midway through the loop.

Conclusion:

None of the systems mentioned in this article should be confused with CTC (Centralised Traffic Control) where the prototype is increasingly adopting model practice of large-scale remote-control of power-operated signalling along considerable lengths of route. Well, some modellers do actually signal their layouts and some of them use, CTC?

MAIL BAG

Sir,

I wonder whether any of the ABLO group could be persuaded to do an article with plans, photos, etc. of their Brill 75 class railcar (SAR) construction project as briefly mentioned on page 26 of AMRM, January/February 1981 issue.

Charles Schuster,
Goodna, 4300.

Sir,

Great magazine you have here but a few questions must be asked here on a few subjects within the magazine that have cropped up in May/June 1981 issue.

First, Page 35 —

If you read this article thinking you can start in N scale you would make a complete fool of yourself going to a hobby shop and asking for N scale code 100 or 85 track, white metal Prototype parts of brass locos because 'THEY DON'T EXIST YET'. The heading should have read 'INFORMATION FOR NEW MODELLERS IN HO SCALE'. Remember, that one has to know what scale equipment is available. You also did it again on Page 38. Not everybody knows that Hornby only produce OO equipment. It's a pity I couldn't do this bash in 'N' scale as easily, isn't it?

The only clue that gave that away the fact that Mr Graham Frazer's (any relation to our PM?) was HO.

The only clue that gave away the fact that Mr Graham Frazer's (any relation to our PM?) was HO was the fact that he used Berg's 10.5 mm wheels!

No clue at all in Page 41's 'Lima Cars' article, and why do you think that everyone buys brass models in HO scale NSW prototype, when I've seen an N scale brass 36 class a few years ago?

I hope I'm getting the message across that there are other scales than HO, and that not only SCMR members read this magazine. The Sydney N Gauge Model Railway Club & New South Wales Modellers Group division membership is approx. 140 members from Perth to Los Angeles, USA and are N scale modellers.

Also could we have more N scale features in your magazine for the benefit of those prospective N scale modellers out in the railway modelling world?

I'd like to thank you for allowing me to send this piece of advice (criticism?) and hope that you publish this letter in its unaltered state (two irrelevant paragraphs were omitted) and keep up the fantastic job you and your crew are doing and thanks for the colour spreads in our magazine.

P. Kirkbridge,
Harriss Park. 2105

For better or worse AMRM at present follows the worldwide publishing trend whereby the specific

scale of a model or item is assumed to be HO, unless otherwise stated.

We have printed every N scale article received over the past seven years, which is not many. For a better coverage we will need to receive more articles from readers. Perhaps some of those 140 members would care to contribute? Ed.

Sir,

In the Kalmbach book, 'Scenery for Model Railroads' they mention a moulding material called 'Hydrocal', which is used in the same way as plaster of paris but is much harder when it sets. I would like to know if this material is available in Australia, and if so, where from.

Thank you for an excellent and informative magazine.

Bruce Morley,
Frenchs Forest 2086.

To our knowledge 'Hydrocal' is not available in Australia but there are at least two other products that can be used in place of 'Hydrocal', they being Victor Hardwall Plaster and Victor Cornice Cement (plaster). Both are available in various size bags from major hardware outlets.

The secret to using either product is to apply it in at least two coats. The first 'coat' should be a sloppy mix, soaked into paper towels and laid over the scenery former, with at least two layers for the first coat, then leave until completely dry (i.e. a couple of days, in winter). The second coat is then applied and worked into formation with respective tools and left to dry. This will only be an hour or so, the first coat speeding up the curing time.

A very hard, durable surface, ready for any addition or 'zip' texturing will result, as long as the material used is fresh. (Editor).

Sir,

Congratulations to Stuart Liversey for his kitbash of a 'KF' flat wagon. It is possible to obtain a closer-to-scale model of a 'KF' by cutting down a Peco 15' underframe kit (No. NR 122) and shorten it down to get a 22' long wagon, and a 11'6" wheelbase by cutting a piece out of the centre and gluing the halves together and proceed as per the remainder of Stuart's article.

Readers interested in this style of kitbash are advised that the Sydney N Gauge Model Railway Club publish similar articles in their newsletter, details of which can be obtained from SNGMRC, PO Box 4, St Leonards 2065.

Peter Kirkbridge,
Harriss Park. 2105

Sir,

I am fairly new in the field of model railways, having started 2 years ago. I am about to start kitbuilding and kitbashing rolling stock, on Vic. Rail prototype.

From what I have heard and read in your magazine Freidmont make a large selection of Australian prototypes.

Problem: The nearest retailer I know of who stocks Freidmont is on the other side of Melbourne at Coburg, and having no car or licence it is very hard to get there and back.

Can you help me?

John Miller
Doveton, 3177

When it is impossible to get to a shop, mail order is the only answer. (Editor)

Sir,

Welcome back Menangle; the drought is over; the grass was greener, but where were all the sheep? Have the Tortoise and Dinosaur finally been fed?

Congratulations to Ray Love and the 4th Castle Hill Scout Group for a well run local exhibition.

P. Icked
Baulkham Hills, 2153

Sir,

Concerning MRC/Friedmont:

Other people have given their views of these castings, and now I am moved to give mine. They're great! I'm a student and have neither the interest or ability to scratchbuild all my rolling stock, my capabilities extending to kits and (Kadee) coupler installation. I'm a VR modeller, working in 'N' gauge, and have so far an 'S', 'RY' wagon and a louvre van (funds are the problem).

The 'RY' is excellent which, with a cut down Peco 10' chassis and Kadee couplers, which have pre-moulded recesses for correct height, turned out extremely well, and was the first one I made. The louvre van turned out similarly, on a Peco 15' chassis. Some people have complained about the 'S' not being very good and yet I inspected several very carefully before purchasing one free of blemishes. Keep them coming Friedmont; How about T's, X's, C's? What about steam?

Concerning Weico:

I am also a wargamer and aircraft modeller, so I am relatively experienced in plastic kits. When the Weico coaches came out, I wondered why they had to be in metal. I bought two, and cautiously tackled one, and made a mess of it. I did not rush it, though, it took three weekends. I'll try another, and see how it goes, but could anyone give me a reason why a kit is better

Continued on page 50.

VR X class Mikado — A Postscript

Ross Hurley is not the only draughtsman with problems (see Sept./Oct. 1980 AMRM), but unlike Ross, I can't blame the Railways Drawing Office (this time!).

The problem in question is the trailing truck fitted to the locomotive in my drawing of the VR X class Mikado in the March/April 1981 AMRM. It wasn't until I saw my creation in the magazine that I realised the mistake.

Firstly the sideframe appears to vaguely resemble the early style cast truck and, secondly, it is fitted to a locomotive which should have a fabricated type of truck. The subject of the trailing truck wasn't covered in the original article, so herewith are a few notes on the subject as well as a drawing.

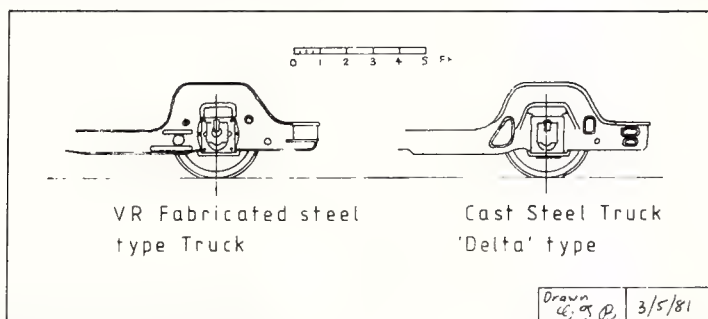
The first batch of the X class (27-37) were built with a stock-standard "Delta" cast steel truck fitted with a "Franklin" booster engine. Incidentally, Precision Investment Associates Inc. of the USA do a nice set of castings for this truck which is listed in Walthers catalogue.

In the early 1930's the VR introduced a new trailing truck fabricated by arc-welding from

mild steel. This truck design appears to have been standardised and fitted to the other members of the class built from the late 1930's onward. However, photographs taken in later years show cast trucks fitted to later built locomotives and fabricated trucks fitted to first batch locomotives, so presumably trucks were swapped as locomotives passed through the shops over the years.

As a postscript, the order for 15 X class locomotives, which was placed on Clyde in the early 1950's and cancelled due to dieselisation, would have introduced to the VR a locomotive radically different in appearance to the rest of the class. This batch had many features in common with the R class then being delivered. Such features included the "German type" smoke deflectors, a combined steam dome and sandbox on top of the boiler, a single window cab and a tender similar to the R class. Unfortunately the diagram I saw didn't specify if an automatic stoker was to be fitted.

Graeme Brown



Up-Rating Monochrome Film

Continued from page 35.

and it forgives you), HP5 must be treated with the utmost respect. Whilst I might give the impression to many that I have enjoyed tremendous success with its faster speed properties, let me also reveal that I have had one or two sheer disasters too. All have been caused through either over-exposure (by just one stop), or through over-development (caused by developer too hot). Whilst these problems are my own, the pictures, had they been taken on FP4, would have been successful with good printing technique. Alas, HP5 does not forgive the photographer to the same extent. And I suppose Tri-X, and any other fast film does not either.

So, by this, when up-rating HP5, I have found that my most successful results are when the exposure is a small fraction under what the meter says (as little as 1/4 stop), and the film is developed no hotter than 22 deg. C.

My table is thus:

Film Speed	400	650	800	1600	3200
Develop. Time*†	6.40 mins	7.10 mins	7.35 mins	8.30 mins	9.25 mins

* Agitated 8-10 seconds every minute. Temperature 21 deg.

† Add 10 seconds for roll films.

The higher the uprating of the film speed, the less agitation required. The shorter time film is agitated, the finer the grain will be.

It can be seen that this table varies little from the FP4 times, and rated normally, HP5 and FP4 (and Kodak Plus X and Tri-X) can all be processed together.

A further pitfall

One obvious problem which I have not yet mentioned is access to a spare camera body to enable this interesting up-rating technique. For instance, one can not shoot a morning's train pictures in perfect normal conditions and film speed, then change the asa rating mid way

through after bad light appears.

Once a film has been started in a camera at a certain asa rating, that film is committed to that speed. That is unless one is prepared to possibly ruin what has already been taken in favour of a more valuable difficult picture.

The secret of course is to carry a spare camera body which can be loaded to suit the conditions. If one home processes, all the better, for portion of the film can be processed and the rest of the film in the cassette can be re-threaded through the camera at a later day. This is what I call a "short end". They are extremely handy for difficult situations.

Whilst I hope this article has helped Mr Neale, and a number of other readers who have discussed up-rating with me in recent months, I hasten to say that it only skims the surface of an interesting subject. Only personal technique and methods can successfully satisfy any individual and it must be made abundantly clear that this article is a guide only. It works for me and some associates, but we are still experimenting. In this, I would be extremely interested to learn the results of any reader's personal experimenting with up-rating. I have, for instance, not discussed Kodak's fine black and white films in any detail because quite frankly, most of my experience has been with Ilford films. Maybe a reader who has performed exhaustive high speed work with Kodak products could comment, with illustrations.

Gremlin Department

One very minor typographical error seemed to slip into my May/June 1981 column. The caption on P21 (bottom picture) when detailing the "technical information" should read 250th at f3.5 and NOT 250th at 13.5!

Finally, I would again like to thank the many greetings and letters received regarding this column, particularly that from Mr Richard Yaremko of Calgary, Canada. I am delighted that my short articles are of interest and assistance to an overseas reader.

MAILBAG

Continued from page 49.

made in metal rather than plastic? How about someone trying injection made rolling stock (in 'N' as well)? What about it Airfix... Trax...?

Concerning Standards:

This may horrify some people, but while I am bashing up some decent locos, I will be running a GP40 painted in near VR colours. I know it's wrong, but at a distance, and to other people, it looks alright. All I'm trying to point out to other Juniors is that 'do what you want, because it's your money'. If someone says you are off your rocker, ask them for something better! Previously I ran HO/OO, and had two 'B' imitations, but I repainted and ran them, because I could not afford replacements.

P.S. Finally keep up the good work, and hopefully soon you will receive a report on my layout, individual structures and stock. This is in response to your call for materials to publish. I'm getting off my backside to keep the magazine going, how about a few more of us doing it? You never know, it may end up a MONTHLY magazine!!

Rowan Cole
Hampton, 3188

Each material, be it timber, plastic or metal has individual qualities that blend themselves toward a specific manufacturing process. With metal it can be photo-etched, which will supply a coach with thin sides etc. Modellers aiming to use all materials need to learn some of the skills attached to each material.

There is some suggestion that the 'N' scale market, especially the VR one is not yet ready for injection moulded kits for there is one on the market at present [Fybren 'ELX'] which has not been received [in Victoria] with the zeal that was expected.

AMRM monthly... a delightful dream... but until the publication can become fully professional and employ full time staff, and the model railway industry shows the ability to support a monthly magazine... it will remain a dream. [Editor].

Sir,

The "Little Wife Strikes Back".

Let me sound a note of hope to all railway modelling widows, whose most common view of their elusive spouses/spice is the sight of a rapidly retreating form, clutching another handful of 'goodies' borrowed furtively from among your kitchen utensils.

Encourage him to buy all he needs of those new magazine binders being hawked by S.C.M.R.A. Track them down after arrival; if necessary, empty the magazines they contain back onto the untidy pile whence they came, and head off to your hidey-hole with the loot — magazine binders that are just right (even if a little 'off' in colour) for your collection of 'Gourmet', 'Carriers Kitchen' or whatever.

If he complains about the binders, tell him it's time he bought some of his own, or better still give him all those old cut-down wine casks that you used to make do with.

Good hunting.

Sarah Szacsavay
Hornsby, 2077

Sir,

The Sage of the LCH, CCH

The LCH Hopper wagons were used in the early 1960s to transport coal from Campbelltown to Balmain. The coal was transported by S. & M. Fox in small ridge framed trucks mostly international A.A. 160 which carried around 9 tons. It was transferred from road to rail by way of a dump which resulted in quite a lot of spillage. The hungry boards were fitted primarily to help overcome this spillage. As less was spilt more was carried and hence became the CCH classification.

Previously a number of LCH wagons had a small single hungry board fitted but these wagons did not carry any special coding.

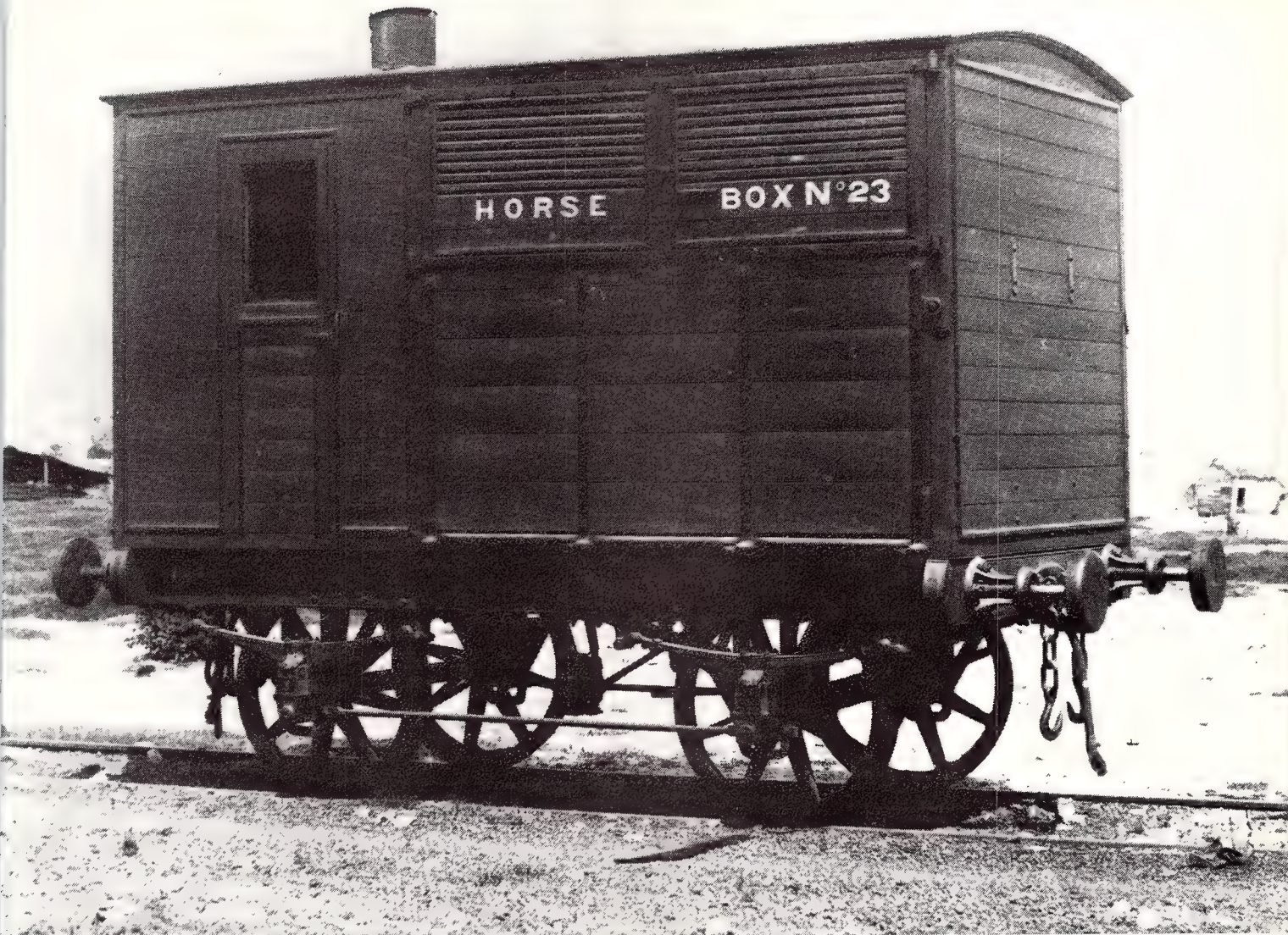
For what it's worth.

J. Cooper
Canley Vale, 2166

Sir,

I have been concerned by the attitude displayed by staff of some hobby shops. These chaps should be aware that the customer who asks for advice or wishes to view an article on the shelf behind the counter is not a nuisance, but his very bread and butter. It is also annoying when the same chap can gush over one on a different occasion. I have visited

Continued on page 52.



The State Rail Authority of New South Wales' photograph of a MKG. (For the description and plan of this vehicle see AMRM Nov/Dec 1979 issue.)

Horse Boxes of the N.S.W.G.R. — 4

A Postscript compiled by Paul Rogers

General Notes

When delving into the history of rolling stock, particularly when the topic concerned has not received much prior publicity, there is often information which remains outside of the researcher's catchment area. Since compiling the notes on N.S.W.G.R. horse boxes, several matters have arisen in respect of these vehicles. This postscript to the article permits me to introduce additional data on the subject and to correct errors made in previous segments.

Some information has come to hand which suggests that the numbering of N.S.W.G.R. rolling stock prior to 1889 may not be fully in accordance with traditional views — and in this respect I can only propose that the old Great Northern Railway Register allowed for vehicles used on the Newcastle-based system to carry "systemwide" and not "local" serials if they had been built from about 1885-86 onwards. Hence, early G.N.R. cars needed renumbering in the late 1880s, but newer vehicles received serials in the same lists as their Great Southern and Western Railway cousins when outshopped from the manufacturer. This means that the 13 G.S. & W.R. horse boxes mentioned on pages 18 and 19 of the September/October 1979 A.M.R.M. and on page 23 of the November/December 1979 issue as being employed on the G.N.R. network were in fact Great Northern units which received

Previous articles in this series were:

September/October 1979 — DKG/KG vehicles

November/December 1979 — MKG/KG and SKG/KG vehicles

March/April 1980 — BKG and KKG vehicles

"systemwide" numbers at the time of their introduction. I have now been able, incidentally, to identify these vehicles as nos. 91-103 inclusive.

Most likely, a "general" number list in existence prior to 1889 would have tied in with the building of the Hawkesbury River Bridge, for which a contract had been placed in 1885. To test the theory of a "general" number list for new stock built after this date I chose what is probably the most simple case: that of the sleeping carriages. Here we have G.N.R. vehicles 11 and 12 (delivered in October 1885 and January 1886, respectively) fitting in perfectly with the G.S. & W.R. list, in which no Southern and Western sleeping cars 11 and 12 ever seem to have appeared. Back to the horse boxes: the last cars placed in service with G.N.R. type road numbers were 42, 43 and 44 during November 1885; the next batch, appearing a year or so later, carried "systemwide" identification. The "straight"

numbering of new freight vehicles on the Northern system appears to date from sometime between June and October 1886: there were new G.N.R. meat vans being given serials under the old scheme as late as 27 May 1886.

It has been suggested that around 1890, Mr Thow commenced a rolling stock renumbering scheme which may have only neared completion by 1893; hence the calls in 1893 weekly notices for unaccounted vehicles. This renumbering, which traditional theory dates from 1892, would have been done on a random basis, since the new numbers were in the form of metal plates attached to the carriages and wagons concerned, and it was easier to put any set of plates on to a given vehicle and record the incident rather than attempt to match old numbers with new serials in a pre-determined order. If such an event did occur as early as 1890, it is possible that some of the pre-1885/86 freight and passenger stock used on the Great Northern Railway may have been renumbered directly from the original scheme to the 1890 list, thus bypassing the intermediate series although provision had been made in that series for them.

DKG/KG Boxes

Weekly Notice 19/1908 dated 7 May 1908 relates that the code DKG was to be used to indicate a horse box fitted with dog compart-

ment. It would seem from this document also that DKG type units were fitted with air pipe only and not the complete Westinghouse braking system.

I am told that a search was instituted during 1893 for composite brake van 32 (to permit reclassification as HW.628), so that it seems as if Horse Box 111 (ex 3N) may have carried road number 628 for a short period prior to its demise in 1894.

Cars 1N and 2N were built on underframes of the type used for high-sided open wagons which were later known as the "B" class: the N.S.W.G.R. Annual Report for 1865 lists 38 "B" type wagons out of an indented total of 40 units. This clarifies the mystery of the 3'0" diameter wheels employed under horse boxes 1N and 2N, and raises the question whether Great Southern and Western boxes 1 to 4 inclusive were recipients of frames which may originally have been proposed for freight stock.

MKG/KG Boxes

The difficulties associated with operating several types of horse box under the KG code became apparent by 1908, for Weekly Notice 19 of that year states that KG cars fitted with attendant/jockey accommodation were to be known as MKG type (the "M" in the coding standing for men's compartment). This weekly notice also mentions that some MKGs were fitted with the complete Westinghouse system while others of the class were equipped with air pipe only — possibly implying a contemporary upgrading program?

Cars 26N to 30N inclusive are given a capacity in old N.S.W.G.R. records of 3 horses and 5 grooms, cars 31N to 34N inclusive, 3 animals only, while units 35N to 44N and 91 to 103 (all numbers inclusive) were rated for 3 horses and 3 attendants. This suggests that certain boxes may have been allocated to certain clientele and for certain duties, cars 31N to 34N inclusive probably having a larger area for the stowage of fodder. The "3-across" and "5-across" seating in the other vans mentioned above generally draws a parallel between first and second class "dog-box" seating of the pre-Thow era.

Particular interest must be directed towards car 31N, as there appears to be no record of it having actually received its "1889" number of 139. Perhaps it was damaged at some stage and stored prior to implementation of the 1889 renumbering scheme, with provision being made for the issue of road number 139 if the vehicle had been returned to traffic.

SKG/KG Boxes

The "S" in the SKG code issued by authority of Weekly Notice 19/1908 stood for standard horse box. All vehicles in this group were listed by that document as being fitted with "Westinghouse brakes complete".

BKG Boxes

I am now of the belief that the 1946 BKG stock was formed from mating the 1921-built bodies with BKR underframes (these chassis being rendered surplus through cessation of hostilities).

The caption on page 31 of the March/April 1980 A.M.R.M. should refer to BKG.865, not 856 as shown.

Car 552 received a steel underframe (and automatic couplers) circa 1971, the origin of which had not yet been determined by the writer. This reframing exercise may have been due to the need for a back-up unit for KKG.1524.

BKG.780 has been inspected recently at Shellharbour. These observations reveal that this unit did not possess electric lighting, and there is the probability that some of its brethren may have ended their days in similar condition.

KKG Boxes

Car 1524 was fitted with a steel underframe and automatic couplers during October 1971 for workings between Sydney and Brisbane per medium of the Brisbane Limited Express. The underframe employed was of the "fishbelly" type previously fitted to an MLV class bogie louvered van, the bogies being of the 2AE pattern. After withdrawal of KKG.1524 in 1974, the underframe, bogies and sections of the bodywork were used for the building of locomotive test car L.1107.

I have made a serious mistake concerning the Laycock drawgear. This system was actually the old arrangement which did NOT lend itself to easy conversion to automatic drawgear. In passing, I might mention that conversion of vehicles fitted with Laycock drawgear did take place (for example, some of the 72'6" passenger stock built prior to 1920), but it would appear that such modifications needed solid justification. Around 1920, Chief Mechanical Engineer Lucy proposed that transition drawgear be incorporated on future stock as a replacement for the Laycock system, thus permitting the operation of longer and heavier trains. Many freight and passenger vehicles built from about 1920 onwards were, consequently, fitted with transition drawgear

MAILBAG

Continued from page 50.

six different shops over the past few months and two shops in particular leave a lot to be desired. The pleasant greetings and obvious 'glad to help you' attitude of the other shops is a very nice change.

I would be interested if this situation has been experienced by other modellers.

*Ted Gray
North Rocks, 2151*

Sir,

After a break of some 7 years, my sons and I are resurrecting our HO equipment. Naturally we will be redesigning our outfit and doubtless adding to the system.

Can you direct please to a roadbed/permanent way guide for scratchbuilders? With the foam underlay at \$5.75 for 16ft and the whole system needing it due to the perishing of the old roadbed we wish to economise on that score (and produce a uniform result, as well). I have cast about a bit through several AMRMs but have failed to locate an article or ad for the home/scratch built permanent way.

*J. Denton
West Pymble, 2073*

One accepted method of roadbed is 1/8th inch [3mm] cork which is available in hobby shops [rolls] or direct from major hardware/engineering retailers in sheet form. Cut the cork into 3/4" [20mm] strips and taper one edge to represent the side of the ballast. [This can be achieved when cutting the cork or by sanding with sand paper.] To lay the cork in place, a track centre line should have first been drawn, and the cork is glued, with PVA [Aquadhere] glue, with the squared edge along the track centre line. Hold in place with drawing pins. When secure fix the other side of the roadbed in place in a similar fashion, except that the second section will be butted up against the first set section. After both have dried securely, remove the drawing pins and lightly sand the top edge to remove any uneven spots. The roadbed can then be cut for pointmotors, couplers, etc. Before securing the track in place paint the finished road bed with a PVA paint, matt black is fine and two coats will suffice. The highlight of this method is that the cork in 20mm x 3mm strips is pliable enough to be curved to even 18" radius [455mm] without cracking or breaking.

[Editor].

Sir,

I recently attended the so called Model Makers Fair at the Sydney Showground and would like to make some comments.

Firstly, for the \$3 admission I had expected the hall to be full of displays, not just the two rows of stands which were there.

Secondly, the ratio of commercial stands to non-

when new, and it seems very likely that it would have been adopted for the 1927-28 built KKG boxes as well as the 1921-built BKG stock.

Modellers wishing to reproduce the steel underframed boxes of the 1790-1801 group may like to marry the body diagram given on page 21 of the March/April 1980 issue of A.M.R.M. to the MCV underframe drawing shown at page 40 of the November/December 1978 magazine.

Acknowledgements

My appreciation goes to several people for pointing out details of the N.S.W.G.R. horse boxes. In particular, I am grateful to Don Estell and Allan Watson for their advice and assistance.

Conclusions

This series of essays on horse boxes was intended as a curtain-raiser to a number of coupled articles dealing with some of the less orthodox items of N.S.W. coaching stock. In future issues we hope to be able to present carriage and motor vehicle trucks, hearses and prison vans, plus travelling post offices. There are also plans to cover the operations of these interesting vehicles.

commercial displays was so high as to make me wonder if I was at the Toy Fair. This trend was prevalent a few years ago, but most groups who organise exhibitions have now realised that people will not pay to see trade stands that they can see for nothing.

The third point was the advertising, or lack of it. The first I or any of my modelling friends knew of the show was on the Wednesday before it opened.

In conclusion let me say that of the 50-odd exhibitions I have attended (on both sides of the barriers) in the last ten years, this was undoubtedly the worst.

*Wes Nicholson
Hornsby, 2077*

Wes cannot be as observant as he believes for the Model Makers Fair was clearly advertised on page 67 of the July/August issue of the Australian MODEL RAILWAY Magazine!

[Editor].

Sir,

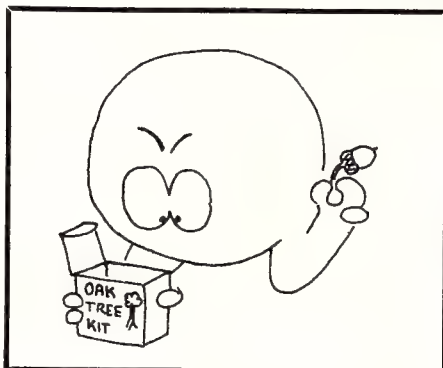
Having come by some copies of your economy destroying publications I find myself launched into a frenzy of railway construction and operation and whilst my wife and former friends hate you and the rotten message you are spreading please find enclosed my cheque so that I can be added to your subscription list...

For obvious reasons this reader shall remain nameless [Ed.]

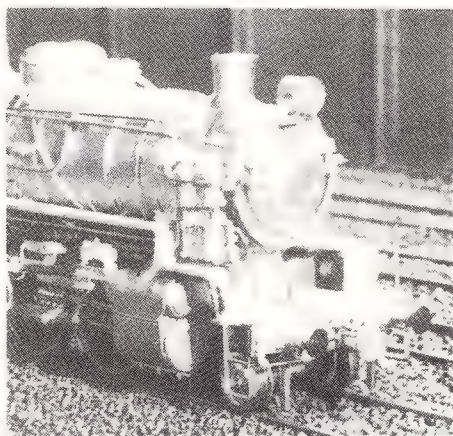
N.S.W. VEHICLE COUNTDOWN — 22

In 1955, the N.S.W.G.R. had 205 'A' type open wagons in service. Today, this class is excluded from revenue service.

Paul Rogers



REVIEWS



D59 oil burner.

D59 class (Oil Burning Version) of the N.S.W.G.R., H.O. Scale model by Samhongs of Korea. Distributed by Bergs Brass Models. Price: \$345.00.

Refer Review of Coal Burning Version in March/April 1981 issue of A.M.R.M.

The D59 class was originally imported into Australia by the N.S.W.G.R. in 1952. They were manufactured by the Baldwin-Lima-Hamilton Corp. in the United States of America. They are of typical American appearance, quite a contrast to the Lucy/Beyer Peacock traditional designs in the N.S.W.G.R. May I refer readers to the review of the Coal Burning Version as mentioned above.

The model is representative of the oil burner in the years immediately prior to conversion to coal firing. In this form it had the standard rotating marker lamps and no cowl over the steam turret. It is very disappointing to the reviewer that this cowl was on the model of the coal fired locomotive. However the importer states that the changes were unsolicited. This emphasises the amount of detail research and briefing in order to even get close to target.

(Editors Note: The cowl mentioned in the preceding paragraph is the cover fitted over the steam turret, which in turn was positioned on top of the firebox, just in front of the cab. The D59, as introduced (an oil burner) has this cover (cowl) fitted, and it seemed to disappear a few years before conversion to coal firing, so the D59 as an oil burner was fitted with the cowl for a short period, but as a coal burner never.)

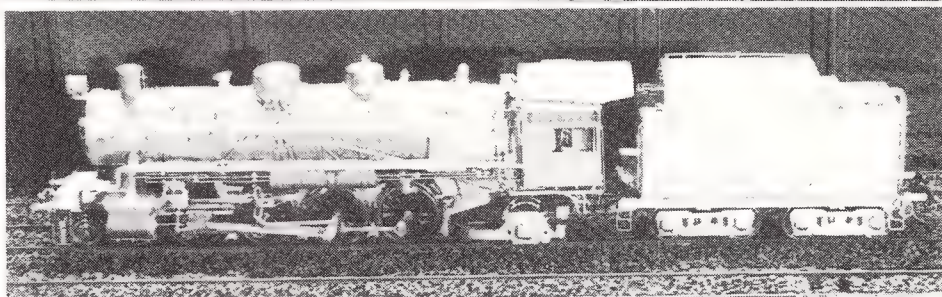
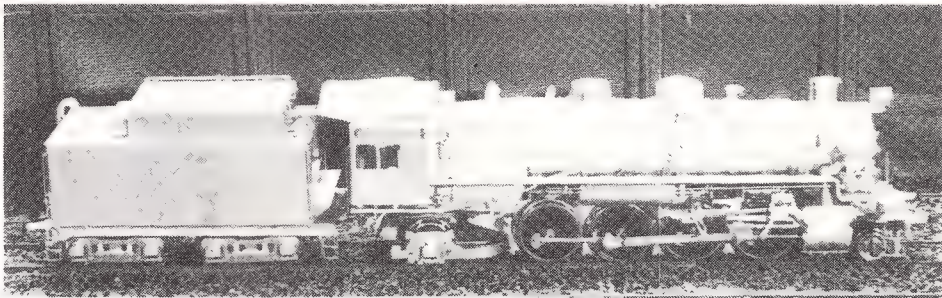
The locomotive is the usual fabrication from brass etchings, lost wax castings and machined parts. An innovation on this model is the sprung buffers (with chemical blackened buffer shank) but the generator continues to follow recent practices by importers in that it is not fitted with an exhaust pipe, otherwise detail and assembly is of adequate standard. There was only one broken solder joint on the unit I reviewed. The smoke box door and boiler back head are appropriately modified from the original model of the Coal Fired Version. This last point does limit the swapping of smoke box fronts to result in a steam turret on the Coal Fired Version but more of that towards the end of the review. The headlight also is smaller than scale but easy to replace or accept.

The tender is a revised version of that supplied with the earlier model, with addition of etchings, etc., to adequately represent the oil tank. However the conduting along the side of the tender does not appear in photographs of oil burners as late as 1964, seems this is a coal fired only trait. Sprung buffers are also fitted to the tender but this does not mean care must not be taken to select a coupler to suit your rolling stock and track curvature.

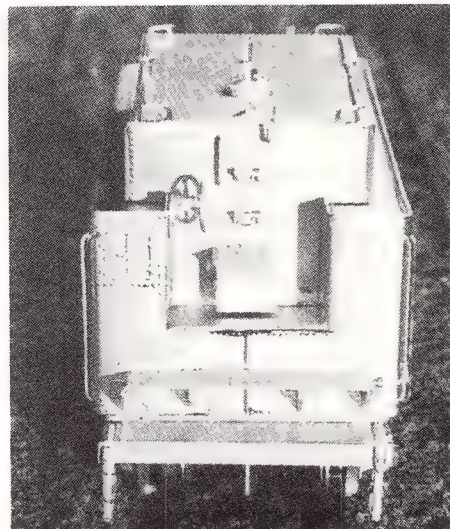
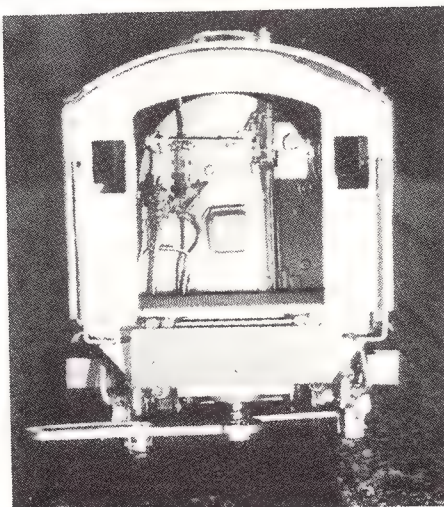
The unit ran well straight out of the box although, it seemed slightly smoother in reverse. (When run in, the coal version is silky smooth.) They do not excel in load hauling capacity, my standard test of a standing start on a 2½ grade 30 inch radius curve resulted in a lift of 4 brass FO cars. This however, can be improved quite a deal by increasing the amount of lead ballast by approx. 50%.

A word of warning to those lucky people who have a model of both coal and oil versions. It is not a simple task to remove the cowl and steam turret and swap. When the cowl is removed there is a hole that must be plated over and shaped to fit, then the pipes leading to the newly installed turret will probably be a little short. Do not attempt this conversion without some experience in soldering and working with brass.

Lastly may I recommend the N.S.W.T.R.M. Roundhouse of January, 1981 which has a feature article on



Right and left hand side of the oil burning D59 by Bergs Hobbies.



Cab detail and tender detail on the oil burning D59.

the prototype of this model.

In summary this latest release from Bergs is as good as any we have had from this source, it is a shame that the coal version did not have some of its features but this model must be looked at for what it is; a good model of an interesting prototype.

Phil Collins

Farm windmill kit in HO scale by Herka. Sample supplied by Train Tronics Australia, P.O. Box 402, Edgecliffe, 2027. Price: \$2.25

Windmills, or wind pumps as they are generally called, are used to pump water, using the energy of the wind, which blows onto the blades of the fan which drives, via a gearbox, a shaft which is connected to a water pump or an electrical generator. The water can be pumped from a bore or from a dam to a water tank. Wind driven pumps and generators are very common in Australian country areas.

The kit, formed from injection moulded styrene, is supplied in a blister pack on a card. Total! No instructions or suggestions as to assembly are included. The first major problem is to remove the components (attached to the moulding sprue) from the blister pack without breaking the parts.

The second problem is determining the correct position for the gearbox assembly and the drive shaft bearing and support. Securing the flash ridden parts together was achieved with M.E.K. (most styrene liquid solvents would suffice) and the flash removed with a sharp blade and file.

The completed model is a fine wind driven pump, as long as care and attention is given to preassembly preparation. The model scales out 42' high on an eight foot square base. The fan blades are 4'6" long (9' dia). A simple kit but made difficult due to the lack of instructions and the excess flash.

Bob Gallagher

Silverton Tramway Locomotives compiled by Steve McNicol. Published by Railmac Publications, 8 Walditch Street, Elizabeth Downs, SA 5113, who supplied the copy. Price: \$1.80 plus 40c postage.

This 26-page card-covered book, as its name indicates, covers the locomotives used on the Silverton Tramway which was formed in 1885 and operated a line from Broken Hill to Coburn on the South Australian border. The 3' 6" gauge 35 mile line was completed in 1887 and the first train entered Broken Hill in September 1887. The main task of the Silverton Tramway was to tranship the ore and general commodities from and to Broken Hill and the border. The tramway reigned supreme until 1970 when gauge conversion made the Silverton line redundant, although the Tramway still controls the transshipment of railway work in and around Broken Hill with two (gauge) converted locos.

The Tramway used and operated a number of locomotives on its system and this book covers, in written, photographic and illustrated form, the range of locos used. Photographs in the main are of sharp and even contrast, and many would be a guide for modelling purposes. The book is well presented and although small in size very interesting. A useful little publication.

Bob Gallagher.

Action-Lit automobiles in HO scale by Train Tronics. Sample supplied by Train Tronics Australia, P.O. Box 402, Edgecliffe, 2027. Price: \$10.50

The design of this product is to supply components that will allow the modeller to add automobiles that have working lights to the layout. All components are supplied on a blister card, and the kit reviewed contained two Eko automobiles, two 12 volt lamps

and mounting holders (with additional clamps) and twelve feet of fibre optics.

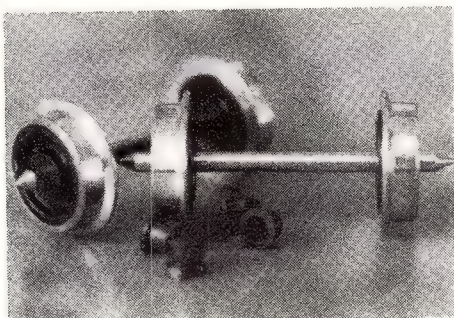
The objective is to fit the fibre optics into the light positions on the automobiles and to direct a light source, which is under the layout, into those light positions (headlight, tail light, etc) on the cars via the fibre optic. Full details are given on the rear of the package card to complete the project, including details for forming lenses from the fibre optics.

The automobiles supplied were a VW (Bug) and a Jeep Wagon, both of which are found in Australia, and both models resemble as claimed. The detailed autos, would be an added facet to a layout that uses lighting effects for day and night operation.

Bob Gallagher



Left: the old Lima mech . . . Right: the new Lima mech fitted with capacitor.



Sentinel 9mm diameter gauge disc wheels. Samples supplied by the manufacturer. Price: \$1.95 for two axles and four bearings. Available most hobby shops.

This addition to the Sentinel range of wheel sets is made in their usual manner with plated metal rims and axles, and a moulded plastic centre. The ones reviewed were supplied with moulded plastic bearings similar in style to the brass MGW type.

The wheels conform to the AMRA wheel profile in all respects except the rear face of flange which does not have the recommended 5° taper. It is this taper that guides wheels through checks (particularly those with too-abruptly flared ends) and crossings. The flange depth of the AMRA profile is quite deep at nearly a millimetre. It is thought that there would be a substantial market demand for the NMRA RP25 wheel profile with its fine 0.63mm flange and near derailment proof running ability.

Both wheel pairs were in gauge when measured with the NMRA standards gauge though their Back to Back dimension of 14.4mm was only just over the NMRA minimum. Turnouts with checkrails only fractionally out of their correct location could result in less than comfortable clearance, and the vertical face on the rear of the flange increases their chance of binding. With their Wheel Check Gauge of 15.21mm well within the NMRA maximum of 15.24mm it would be better if they were set a little wider on their axles.

The axles measured 25.8mm between points, and the pin-pointed ends had the standard 55° angle. This will ensure fine running in standard bearings.

The bearings supplied were moulded with a good angle to match the axle pin-points, though, like a lot of MGW brass bearings, have flat ends to the 'pin-point' bearing recess. The rims are knurled to give the bearing some grip when pressed into an axlebox. That part of the bearing, however, measured 2.45mm diameter which makes them suitable for Peco underframes only. They are considerably over the 2.00mm diameter of the bearings made by MGW, etc., who, along with most other British rolling stock manufacturers, follow the standard set years ago by Protofour. All other dimensions are the same as MGW.

These are finely made wheels of Australian manufacture, and run freely in the bearings supplied.

Ross Hurley

Lima 'G' mechanism is fitted to NSW 42 class locomotives.

Over the years the Lima locomotive mechanism has been the centre of derogatory comments from modellers seeking a powerful, finely controlled locomotive mechanism. The Lima mech as fitted to the original 44 class was lacking in power, and slow speed control was virtually non-existent. Lima must have been aware of these problems for over the years they have modified and improved the mechanism until now we have the new 'G' mechanism, which has been fitted to the 42 class diesel, and presumably will be fitted to all future locos made by Lima. This must eventually include the 44 class and the S/GM classes as new models roll off the production line.



Left: the High speed geared 1:9.6 mech and Right: the new 1:13.68 geared mech.

The 'G' type mech still uses a three pole ringfield motor, although the thickness of the body has been reduced. A capacitor has been fitted which seems to assist in eliminating TV interference. Chemically etched wheels, still with NEM standard flanges are fitted in preference to the silver plated type. Finally, and most importantly, the gearing of the mechanism has been modified from 1:9.6 to 1:13.68 (manufacturers specification). This has been achieved by the elimination of the four large gears and replaced with six smaller sized gears (3 per driven axle). This is best shown by the photographs. The gears are now held in place with two screws in lieu of the spring clip.

Operationally the lowering of the gear ratio has dramatically improved the control of the Lima locomotives, for by using a standard transistor throttle it is now possible to make the loco crawl around the track, not as good as a can motor driven mech, but nonetheless very slow and smooth. The high speed level has been reduced so that top speed is not over-fast. The lower ratio geared loco was able to haul longer trains on the flat (when compared with the high speed model). However steep grades (ie 1:30) tend to make the units equal.

A fine improvement.

Bob Gallagher

Weather-it, chemical ageing for wood and cardstock, available by mail order from Broad Gauge Models, PO Box 136, Boronia, Victoria 3155. Price \$4.00 posted (4oz bottle).

This is a chemical which looks like blue tinted water, has practically no odour, and has an almost instant effect on wood and wood-based products, such as paper and card. Any wood treated with Weather-it takes on a nicely weathered and aged greyish look. This can be intensified by brushing on more of the fluid. Nailheads can be simulated by applying tiny dots of black ink with a mapping pen after the weathering has taken place. There are various other effects that can be achieved with this product; they are described in detail in the instruction leaflet. One drawback is that spots of dry glue on a model cannot be covered over by this method of weathering.

The product certainly works on soft wood, such as North-eastern, balsa etc., it also works well on paper and card, although not quite as dramatically. This is a high-quality aid for the discerning modeller.

Peter Eisenhut.

ANR decals for ANR Central Way & Works and Brake vans by Broad Gauge Bodies, who supplied the sample. Price: \$1.00 per sheet.

These decals are the ANR boxed style logo that has been in use for a few years. The decals, dark blue in colour, have been reproduced on Walther's decal paper, which is very easy to use. While the decals are designed for HO scale the variety of sizes on the same sheet would allow 'N' scalers to take advantage of this sheet of decals. The manufacturing process has provided for five sizes to be reproduced on the same sheet, and the photo accompanying the review illustrates all sizes. There are two of the 27.8mm long decal, two of the 12.5mm long decal, 18 of the 7.6mm



long decal, two of the 6mm long unit and four of the 3mm long decal. Printing is well defined and the colour very solid. The individual decals are easily cut from the sheet and a few seconds in warm water allows the decal to slide free onto the required surface without breaking up or distorting. Solvaset was used to settle the decal onto the final resting place and it held the surface tightly, again without any distortion.

While these decals are designed for use on Way & Works and brake vans there are other similar sized but differently coloured sets for other ANR purposes. The yellow set is designed for usage on ANR (Australian National Railways) Central freight wagons, brake van and 930 class locomotive. The yellow logo was usually applied to red coloured rolling stock. Another sheet is coloured red and is suited for use on grey coloured rolling stock. A sheet of black coloured decals is also available.

All are very fine products, and very easy to apply. ANR Decals. Sheet 3 — Yellow — Freight. Sheet 4 — Red — Freight. Sheet 5 — Dark Blue — W & W. Sheet 6. — Black — Freight, W & W.

Bob Gallagher.

Locomotion Mk3 (Series 4) Deluxe control unit for HO/00 and N Scales. Sample supplied by Locomotion Products, 14 Jennifer Crescent, Thirroul 2515. Price: \$59.25

The Locomotion Mk3 controller has been on the market for 5 years and has been modified/ altered as advancement of the electronic age and consumer demand allowed. The Mk3 controller was reviewed in AMRM but as the Series 4 version is virtually a new controller, when compared with the Series 1 unit a further review is warranted.

Firstly, the Mark 1 version... why improve on rather good control? The solid state controller has greatly improved model railway operation and slow, smooth control is now very possible — or was (with the Mark 1 version), except that some motors did not respond as well as expected. Even today, most controllers still have an area of control which does not please someone.

The Locomotion Mk3, Series 4 controller, is supplied in a card box and is accompanied with a set of instructions that will assist the operator to learn how to drive trains through the various modes of the controller. The controller is guaranteed for three years, an aspect that has been tested and found to be accomplished without any hassles. The controller is mounted on a 165 mm x 90 mm aluminium plate which has been photographically etched for all relevant markings. The controller is not provided with a transformer, and an 18 volt unit capable of producing 2 amps is recommended. Provision, via screws, is made for connection of AC input and output cables, both adequately labelled.

The Mk3, Series 4 unit has the following modes; shunt, inertia, brake and drift, as well as adjustment on the brake and inertia level. Following the instructions the controller was connected into 9 layout and power supplied at 18.5 volts from a transformer that could produce in excess of 2 amps. Track was clean and rail joints eliminated and all pickup wheels cleaned.

A new aspect of this controller is the overload which (instead of being a powerful lamp) is an electronic device that cuts off the power to the track and indicates the dead short of overload via a blinking lamp and a clicking noise. A little unusual but very effective.

Initially the controller was used on Lima and Hornby locomotive units and while most of the comments are applicable to most brands of locomotives some variations of control were noted between brands. Using the Lima and Hornby 'S' class as a basis the controls were set and adjusted as per directions. The response of the controller was amazing. Movement prior to 9 o'clock (¼ turn) on the control knob and gradual control for ¾ of the control arc! Using inertia the locos pulled away steadily from Stop, with only the occasional jerking evident. Correctly adjusted the brake application could stop the locos. On these two units the control setting was maintained and both responded compatibly.

Unfortunately, when using the same setting as mentioned, and running other brand name units via the controller, various aspects of control were found unsatisfactory, and for these aspects to be corrected adjustments had to be made via the trim pots on the rear of the controller... not difficult but frustrating.

Listed below are comments on some of the units tested with the controller adjusted to cater for individual motor idiosyncrasies:—

Hornby — good shunt control, very smooth inertia pickup and braking.

Lima — very good response to all modes of control. Berg's 73 class — good shunt control, very smooth inertia pickup, no pulsating or jerking (as with other controllers). However, complete braking can only be achieved by winding up the brake levels, which reduces the braking distance.

ECM controlled C30 class — superb start and stop on inertia, although required extra fine adjustment. Berg's C30 — superb control, does not pulsate or jerk between blocks as per other Locomotion controllers.

Berg's D59 — superb control.

Atlas SD35 — superb control.

Mansfield 442 — excellent in all modes, although controller could not quite stop the model.

Sagami equipped 48 class — very good smooth control, excellent crawling ability, but controller could not fully stop the model.

MW005 equipped C30 — very good response to all modes.

AHM (not Rivarossi) — good response, but slow speed control very jerky...believed to be more motor style than controller fault.

Mehanotekhnika — similar response to AHM models.

Tenshodo — inertia start was a little jerky but the stopping and drift control was excellent. This model is equipped with an 'O' scale motor which draws 1.5 amp.

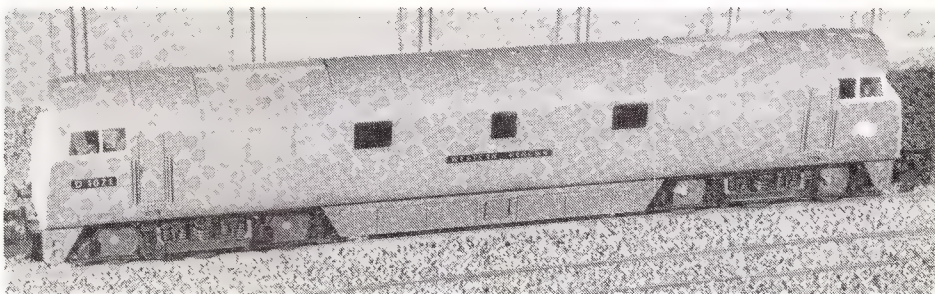
Overall the controller was found to have excellent results, and is definitely recommended to those whose loco stud is from one or two different brands. However, the intermixing of brands and motors virtually necessitates the adjustment of the controller for individual locomotives, an aspect that most modellers would find frustrating. With the top quality motors control was excellent, as was the inertia and drift mode, but the inability of the controller to stop the model without switching the (three position) direction switch to 'off' was an annoyance and could cause a mishap if unintentionally left unattended.

A definite improvement on the original controller, and an excellent controller by any value. Further results will be published when this controller has been tested under constant exhibition usage.

Bob Gallagher

Lima 'OO' gauge British Railways "Western" class diesel locomotive. Sample from Southern Model Supplies, Adelaide, S.A. Price: \$39.99.

Diesel-hydraulic locomotives were peculiar to the Western region of British Railways. The "Western" class locomotives were the final development of this form of propulsion for British Railways and all 74 members of the class had the word "Western" as part of their name. All have now been withdrawn from service on British Railways but several have been preserved. The "Westerns" have become a popular locomotive amongst British railfans so the preserved locomotives should continue to see active service for



some years in a variety of liveries.

The model captures the rather angular body shape well with detail to the standard we have come to expect from Lima. The usual bogie design is faithfully captured but unfortunately the brake shoes are positioned well away from the wheels and they need to be re-located for appearance sake. The window surrounds are noticeably thinner on this model and the windows look much more realistic as a result. Cab seating and dash panel are provided so a locomotive crew would be an essential piece of super-detailing.

The sample model was painted in British Railways blue and yellow colour scheme, numbered D 1071 with nameplate "Western Renown". The painting and lettering were nicely done with even the 'flasher' overhead wire symbols on the end panels. The model is fitted with the usual Lima motor bogie driving on two axles which have traction tyres on one side. It was most responsive using an electronic controller with good low speed characteristics. The haulage capacity was reasonable but a little more weight could be used to advantage.

The "Western" has had four B.R. liveries, blue, red, sand and green. Models in all colour schemes have been seen but not all may be available at the moment. A good model for a modern British layout where Western region influence prevails.

Graham Ahern

NSWR 'HLV/HLX' louvre van kit in HO scale by Rails North Models. Sample supplied by Casula Hobbies, Phoenix Plaza, Macquarie Street, Liverpool, 2170. Price: \$12.50.

The HLV is a 45' louvre van, similar in size and style to the LLV van, except that it has a single 12'8" x 6'6" door in each side, located off centre. Originally there were 75 vans delivered from Tulloch Ltd, in 1959-60 and numbered 29550-29624. In 1963 an upgrading programme was commenced where the floor was strengthened and heavier bogies fitted and the vans recoded to BLV. Upon alteration to allow for bogie exchange they were recoded HLX, all 75 vans being so converted by 1969.

In 1980 there were 66 HLX vans in service. Original colour was grey or black; some were painted PTC blue and the SRA red is now being applied. General usage is for vegetable and fruit traffic as well as general goods workings which include parcels and beer, attached to mail and parcel expresses.

Supplied in a poly bag with a card top, the main body components (floor, sides and ends) are epoxy castings, as are the air and brake cylinders, while balsa sheet and a strip of aluminium sheet is supplied for the roof. A set of assembly instructions, complete with illustrations, along with brass wood screws (for bogie attachment), and four handbrake handles (cast in epoxy) made up the kit.

The main body casting were heavy with flash which was very difficult and time consuming to remove, although there was no chance of spoiling the finished or marring edges. The sides were not quite the same length and any attempt to reduce the length of one side would have spoiled the kit. All detail however was clearly and sharply formed and there were no obvious casting flaws on the surface. Grab iron mounting holes were pre-marked, and those not used should be filled in before painting.

The formation of the louvres is acceptable but the

preciseness of the vertical and horizontal separation sections is questioned for they do not appear to be 'square', nor for that matter is the door opening. The margin in actual measurement is small but is quite obvious. The dreadnought pattern in the ends is well formed and the formation of the underframe is excellent, the deep underframe supports featuring. A feature of this kit is the provision of stand-off supports for the coupler release bars, but for some unknown reason wire for handrails, breakgear and coupler release was not supplied (a usual feature with Rails North kits).

Following the assembly instructions assembly was straightforward, and the sides and ends married together well, despite the uneven length of the sides. The floor fitted inside the body. The method for forming the roof, using balsa sheet for support and compound curving a section of very thin aluminium, was found to be very tedious and the task of filling the roof edge with body filler and sanding to shape proved to be difficult, especially trying not to dent the roof. The final result was not satisfactory and so a section of ventian blind was cut to size, given some extra curvature around the broom handle, and glued in place with (Repco Woodhill) superglue, the finished result matching the reasonably high standard of the remainder of the kit.

The screws supplied for attaching the bogies were found to be unsatisfactory in that the head was too large for the bogie bolster and the coarseness of the thread broke the epoxy body bolster, despite extra care in trying to fit. Metal thread screws (7BA) were used after the resulting damage had been repaired with body putty, and the respective holes drilled and tapped to size.

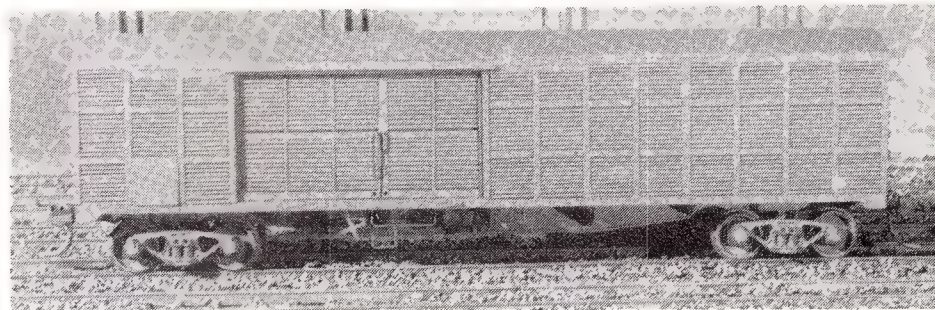
Kadee No. 5 couplers were fitted and no packing was required when Roundhouse bettendorf bogies with 33" wheels are fitted.

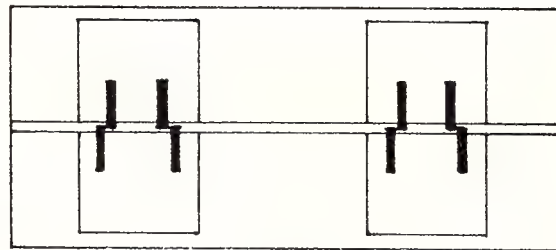
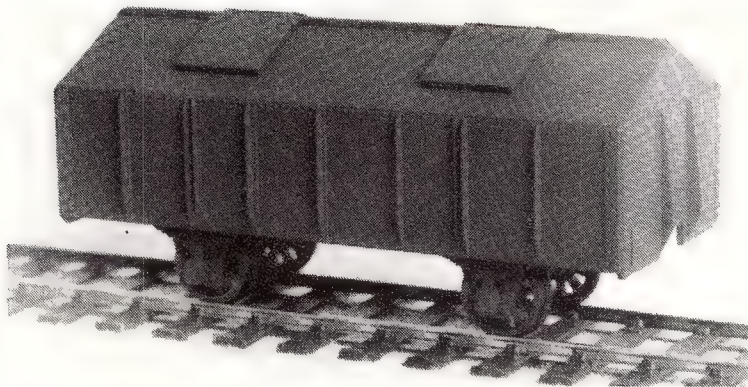
Despite the detrimental comments this is an acceptable kit by any standards, but it is not up to the very high standard set by previous Rails North Models products. Maybe the review sample will prove to be an exception!

Bob Gallagher

RU wagon kit in HO scale by Trax Model Products. Price: \$5.95 each or in packs of six for \$32.00.

Wheat has always been a major traffic on Australian railways and originally it was handled in bagged form. But the enormous quantities involved and the growth of the export market led to the early use of bulk handling methods. Unlike American and Canadian railways, which used box cars for this traffic, Australian practice has been to use open wagons, with a tarpaulin sheet supported on a ridge pole to protect the load from the weather. By the 1940s there was sufficient year traffic moving wheat from country silos to the seaboard to justify the provision of purpose-built wheat wagons, and the NSWGR and built by Waddingtons 250 four-wheelers, based on the U open wagon, which had underfloor hoppers. The resulting RU had a peaked, sheet steel roof, with four large hatches for loading in place of the side doors on the U. The RUs tended to run in block loads on the main lines, particularly the South, but on branches many a goods included two or three RUs amongst the cattle, sheep and general loading. The appearance of the RU did not abolish the





Rooftop view — RU
(Not to scale)

sheeted U wagon in grain traffic, and the two types frequently were found in one train. Later, with the introduction of the bogie BWH and WH types, sheeted U's vanished, and more recently the WHXs have allowed the scrapping of the RUs.

Principal measurements of the RU are 22' long over body, 11'6" wheelbase and 10'5½" height to top of channel ridge. The Trax kit gives sides, ends, two roof pieces, ridge channel, roof hatches and two underframes, moulded crisply in black polystyrene with good, clean detail. Assembly is quite straightforward, although extreme care is needed to ensure exact vertical and horizontal alignment of the sides and ends, otherwise the roof panels will not fit neatly and this would ruin the appearance of the finished model. Extreme care must also be taken when removing the ridge channel from the sprue, for the channel is very brittle and can be easily broken. Thankfully it can be repaired with MEK solvent and left to cure for 24 hours on a flat surface. Some forethought should be given to the grab irons prior to assembly, and if they are to be added (there are 20 per wagon), it is recommended that the holes be drilled into the parts before assembly. (DATA SHEET produce a good plan of an RU.) If a string of 'RU's is to be assembled it would be worthwhile to produce a brass drilling jig to guide the fine drill into the correct position. North-eastern or Detail Associates produce a worthwhile grab iron.

Dimensionally the model is accurate, but if the extremely brief instruction sheet is followed to the letter, the ridge channel will be a little shallow and as a result the slightly oversized roof hatches will sit proud of the ridge channel. This can be overcome by adding the ridge channel after assembly of the roof, the sides of the channel being filed flush with the roof peak and then the second ridge channel added. Alternatively a section of styrene cab be glued vertically between the two roof slopes to form a flat edge surface, and then the ridge channel added.

Placement of the roof hatches needs care too: the instructions, while explicit, need a drawing to reinforce the point that the hinges on the hatches are at different centres and 'interlock' on the ridge. (See diagram on this page, Ed.) It would also be wise to weigh the wagon before adding the roof.

As with the 'K' wagon, from this manufacturer, there are a few basic design faults that mar this kit. The first is that wheels produced to NMRA or AMRA standards will not fit into the axle boxes without the preformed hole being deepened, and very little can be drilled out of the journal. The method to overcome this is described in the 'K' wagon review above. Likewise the axle journals will not mount onto the underside of the floor squarely, unless some of the floor locating ridge on the inside of the sides is removed prior to assembly. Although provision has been made for Kadee, No. 5 couplers, the pocket is at least 1mm too high, and it has to be packed down with styrene.

Modellers new to four wheel wagons will have to be careful to assemble the axle journals and floor correctly so that all four wheels will sit on the track at the same time. This can be achieved if the floor sits down tight on what is left of the floor locating ridge, and the tops of the axle journals must sit squarely and tight onto the underside of the floor.

The principal criticism of the kit, as of the 'K' truck reviewed above, is the complete lack of underfloor detail, and this is more so noticeable with the 'RU' for they have eight hoppers protruding eight scale inches below the side sill as well as the details listed with the 'K' wagon. The parts listed in the K wagon review are needed for the RU as well, along with the pre-mentioned grab irons/iron steps which are a prominent feature of the prototype. Incidentally, RUs appear always to have been bufferless, although there are holes in the headstocks for them.

In all, this model can be considered a good basis for further detailing, but until the extras are added it

cannot be described as capturing the essentially lumpish character of the RU, a wagon no NSWGR modeller can do without. Furthermore a line from the very brief instruction leaflet needs repeating:— 'The RU and K truck kits are not easy to assemble...'

Number series of the RU was 24100 to 25349.

Bob Gallagher and Ian Dunn

NSWR 49 class diesel electric locomotive body kit in HO scale by Bergs Hobbies, 261 Church Street, Parramatta, 2150, who supplied the sample. Price: \$60.00

The 49 class was introduced to the NSWGR in 1960 as a branch line loco, and three orders (each of six) saw the delivery of 18 Co Co 875 HP units. A detailed description of the 49 class can be found in the July/August addition of AMRM.

The model represents the first two orders, units 4901 to 4912, having the deep valance along the running board. The body kit (patterns made by A. P. Berntsen and produced in New Zealand) is supplied in a poly bag with a card top, along with a set, a well detailed and illustrated assembly instructions. The recommended power plant is the Model Power (Mehanotekhnika) SD40-2 which has to be purchased separately.

The basic components have been cast in a top quality white metal, and all parts so made were free of flash and casting flaws. The detail was crisply produced and all appeared square and true to shape. The only parts that were not metal castings were the cab roof (a sheet of brass), roof grid (stainless mesh) and some lost wax castings for the horns and multiple unit sockets.

Following the instructions assembly was very straightforward, and after the components were washed in detergent, super glue (Recco-Woodhill) was found suitable to tack the parts together, prior to epoxy gluing. Most parts went together with ease for the locating lugs were in the correct positions, and the joining edges were square. Templates are provided to glue to the brass sheet so that the cab roof can be trimmed to size and bent to shape prior to adding to cab.

The mechanism is added via two bogie mounts that fit between the footplates. A motor mounting plate is not supplied, for unknown reasons, and a suitable base for the motor has to be fabricated and added to the model. The recommended power unit has a four wheel drive on its six wheel bogies with 13'9" wheel base and equispaced wheels, whereas the prototype's is asymmetrical with a wheelbase of 12'1". The extra length of the bogies has been suitably camouflaged without any deterioration to the model.

With most metal cast kits there are usually a few shrinkage problems, and this kit is no different. The problem unearthed varies from kit to kit, and is related to the width of the model. A feature of the 49 is the smooth line of the cab side where it meets the valance which, with care, can be reproduced on the model. The cab should be assembled first and the assembly of the footplate modified to achieve the same width.

This is not hard to achieve.

Assembled, the model is dimensionally very close to the prototype, except for the footplate extensions out over the front and rear skirts which, when the hoods are in place, is about 12" short each end. The coupler pockets are at least 1mm too high and little thought has gone into the mounting of the coupler, for experience has shown it unwise to glue a coupler onto a loco.

Despite these comments, the producer has achieved the objective in making a body kit which captures the lines of a 49 class excellently, and no doubt it will not be too long before some astute modeller converts this model into a V.R. 'T' class or a latter version of the 49. Some modellers have already produced a separate chassis which uses the Mehano 628 mechanism, with modified sideframes, to achieve the more correct wheelbase, and additional power.

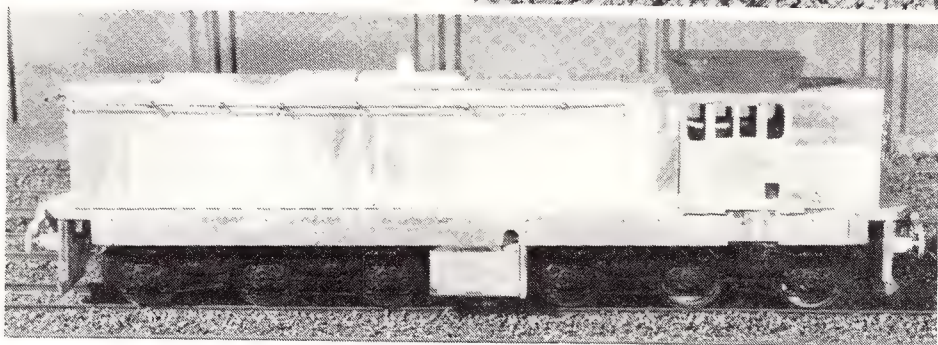
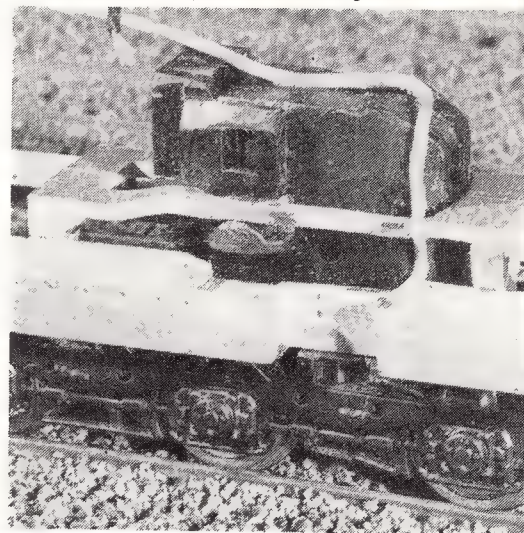
Despite the excellence of this kit modellers should not lose sight of the fact that it is a body kit and, although some wire is supplied to form handrails, the absence of handrail standoffs mars the final detailing. Modellers seeking the 'Brass Model' finish will not be disappointed, however, as long as they are prepared to put a little work into the final detailing, which with a kit as good as this should be mandatory.

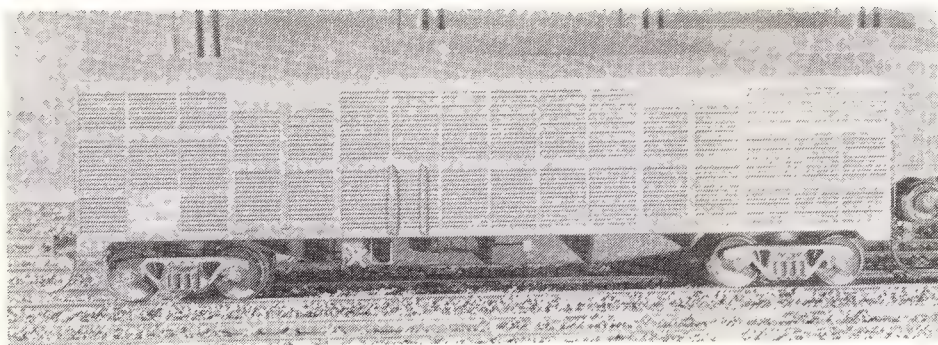
The second diesel kit by Bergs, and quite an improvement over the first (which by comparison with many was not a poor kit).

Bob Gallagher

Readers are reminded that the prices quoted in the REVIEWS were those applicable before the 1981 Budget where an additional 2½% was added to the wholesale price of most models.

Bogie mounting frame on the Bergs 49 class.





NSWGR 'GLX' louver van body kit in HO scale by AR Kit Co., P.O. Box 31, Northgate, 4013, who also supplied the sample. Price: \$4.95.

The 'GLX', a 45ft long louver van, was introduced to the NSWGR as an 'LLV' van in 1958 when Tullock Ltd. commenced delivery of 75 vans, which were numbered 29425-29499. The order was a continuation of production of the 45ft van commenced in 1951 when A. E. Goodwin assembled vans that had been fabricated in the United Kingdom by Birmingham Carriage and Wagon Co. The vans built by Tullock's were different in exterior detail to the UK made vans although both were coded LLV and had the same capacity.

In 1961 A. E. Goodwin commenced manufacture of a further 200 vans similar to those made by Tullock Ltd. and delivery continued until 1965, the vans being numbered 31361-31560. It was during this period of construction that the vans in the 29425-29499 range were modified, first with a strengthened floor and then for bogie exchange. The floor strengthening consisted of deeper floor supports from the side sill to the lower edge of the centre sill. These vans were coded GLV or TLV and then GLX or TLX when bogie exchange modifications were made. The vans made by A. E. Goodwin were also modified and in some instances the modifications were taking place a few weeks after delivery (as an LLV) until early 1964 when 31527 became the first van manufactured as a GLV van. From then on remaining vans were subsequently coded GLV. Modification for the strengthened floor continued until 1970 when the last LLV was converted to a GLV.

Collectively the 275 vans became either GLV/TLV/GLX/TLX vans and in 1980 there were 242 still in service, the breakup and new coding being:—

GLV recoded to NLGF, 17 in service.

GLX recoded to NLGX, 178 in service.

TLV recoded to NLTF, 4 in service.

TLX recoded to NLTX, 43 in service.

The GLV/GLX van was painted grey, some having the PTC blue added but are now being repainted SRA red. The TLV/TLX vans are painted silver and are used for transporting tinplate from the Port Kembla factory to destinations all over Australia. Likewise, the GLV/GLX van is used for fruit, groceries, perishables and general traffic (biscuits, etc) on the system designated by the bogies. The GLV was fitted with low-hang clasp brake bogies as were the TLV but the GLX/TLX were fitted with the modern bogie exchange roller bearing type bogie.

The kit is supplied in a poly bag, with card top. The sides, ends, roof and floor are styrene mouldings, totally free of flash, and only a little de-spruing is necessary. Provision for assembly is made by small recesses on the rear of the mouldings, and with a suitable liquid solvent (MEK was fine) assembly is very straightforward, and in the main all parts fitted together without the need for any body putty. Assembly time was ten minutes.

As with most kits a few minor alterations would give a slightly better model, and these include the end and the floor. As assembled the end sits slightly proud of the end of the side. This can be remedied by a few strokes of a file to slightly deepen the ridges that support the ends on the rear of the sides. The floor, while being moulded with holes for the bogie screws, has a slight defect in that one hole is too large to accept the nominated sized screw. This was overcome by gluing the correct sized nut to the 'inside' of the floor. A little extra weight should also be glued to the floor before securing the floor in place.

The instructions, printed on the rear of the flap, are assisted by a detailed drawing of the vehicle and are adequate for basic assembly of the body. Extra detail can be acquired and added to make the van a good representative of the louver van.

Dimensionally a very accurate model, and quite an acceptable basis for a very fine model.

Bob Gallagher

Rails To The Western Plains by Gordon and Pam Oates, 8 Railway St., Wongarbone, 2831 who also supplied the copy. Price: \$5.95.

Sub titled 'A History of Railways in the Dubbo District... 1881-1981' this 243mm x 178mm, 96 page soft cover book was released in conjunction with the Dubbo railway centenary in February, 1981. As with most books of this type, the general coverage includes the history of the area and the railway, and in this instance details of the many station closures is also included. What makes this book stand out from the normal 'historical' type of book in the eyes of a modeller, is that the photographs illustrate much more than the beautiful scenery or locomotives, for scenic detail abounds; engine sheds, coal stage and station buildings are just a few of the items found in the photographs.

Train photographs also illustrate numerous types of rolling stock in service that is of guidance to a modeller. One such photograph illustrates an 'RU' wheat hopper on its side, the hopper detail quite evident, which will be of assistance to modellers assembling and detailing 'RU's. The text is also illustrated with elevations of the various locomotives used on the lines, the illustrations coming from the pen of Greg Edwards, of DATA SHEET fame. However, the diagrams are not necessarily to any specific scale, being reduced and/or enlarged from the normal HO scale.

All photographs are black and white and with a few (historical) exceptions are very clear; detail is distinct. The only illustration missing is a layout of Dubbo station area and a map of the surrounding country, but this in no way detracts from the book for a diagram illustrates the 'centre-of-the-web' situation of Dubbo.

An excellent publication that will be of use to any modeller of NSW country/branch line operation, and of interest to the historian.

Bob Gallagher

STEAM '81 by R. Cromblehome and T. Kirtland. Sample supplied by George Allen and Unwin, Australia. Price: \$29.95 hardback, \$13.95 paperback.

Steam '81 describes itself as 'the complete enthusiasts' handbook to railway preservation activities and minor railways in the British Isles! In this task the book succeeds admirably.

Details are provided of not only museums and preserved railways of various gauges, but a wide variety of miniature live steam railway operations. A rather staggering total of 512 separate entries appear covering England, Wales, Scotland and Ireland.

The book is divided into eleven sections relating to the various geographical area of Great Britain and Ireland. Considerable detail is provided on the items on display and/or in service at the various locations, and it is obvious that much research has gone into the publication.

The variety of locomotives and rollingstock being preserved is almost beyond comprehension. The sheer volume of items to be restored and looked after in the English climate makes one wonder if all will succeed. Nevertheless the information contained in the book makes it an excellent reference source on preserved railway activities in the British Isles and for those so interested, it is a must for the bookshelf.

For someone contemplating a visit to the United Kingdom to look at preserved railways and railway museums, a copy of this book should be an essential part of one's baggage. Highly recommended.

Graham Ahern

Replacement gears for TYCO locomotives, by Concord Hobbies, 43 Currawang Street, Concord West, 2130. Price in text.

One of the problems with some imported locomotives is the unavailability of spare parts, and this can be very frustrating when a chosen loco can no longer be used due to a busted part. Some Tyco locomotives have proven to have an unreliable gear train

for the delrin intermediate gear cuts-out the diecast gear in a short period.

Concord Hobbies has come to the fore with a set of gears — well two sets actually — to take the place of the damaged gears. One set, cut from steel, retails at \$2.50 and the other, cut from canvas bakelite, retails at \$3.00. Both gears have a tapered reamed hole which can be easily tapped onto the armature shaft, and it is possible that a bit of plastic may need to be removed from the sideframe moulding for clearance.

The gears are neatly cut and are free of any burrs and the smaller gear is secured in place via a press fit and riveting process. A needed product, proudly made in Australia.

Bob Gallagher

Goods Brake Vans & Accident Cranes & Vans, a diagram book by the State Rail Authority of New South Wales (Archives Section — B3 Transport House) York St., Sydney, 2000. Price: \$6.50.

Another book from the Archives section, aimed at helping the modeller. The name of the book fully describes the subject matter printed inside, except that all (except some cranes) are of vintage stock, in that very few of the vans printed in the Freight Wagons diagram book are included.

The 55 page, 340mm x 215mm book is bursting at the seams with relevant details that would assist any keen period modeller produce an accurate model. In the vans, the range is wide (but incomplete) and includes the original goods brake van and even the NSWGR version of the 'Z' van.

The diagrams are reproductions of those usually on sale as individual sheets, and to fit the page size some have been reduced to a point where the indicated scale is incorrect. (For scaling off these diagrams it would be wise to develop a correct scale bar for each plan.)

A real feature of this book is the crane section at the rear; some are so large that a fold out section was necessary to include them in the book.

The reproduction is good, linework sharp and, where reduction has occurred, losses negligible. Most diagrams are dimensioned basically while others are very well dimensioned.

For the modeller interested in the NSWGR steam era this book will be of great interest.

Bob Gallagher

NSWR C36 class locomotive kit for HO scale by D. G. Hoskins, P.O. Box 331, Mittagong, NSW, 2575. Price: \$47.50

It is not all that long ago that modellers of Australian prototype in HO scale were not provided for in any way by the commercial trade. To overcome this lack of supply modellers built their own models from raw materials, an art that is not so common these days. 'Scratch building' was the term applied and modellers were sometimes encouraged in this process by magazines which published articles describing the step-by-step process to build a model. The readily availability of models and cast/moulded kits has seen this aspect of the hobby diminish in importance.

This kit, as it is described, is in essence a fully prepared article or publication that not only describes the step-by-step process for building a C36 but also supplies an enormous number of twice full size drawings on all parts required to build the model. Some parts, basically raw material, are supplied all of which required machining or working into shape. Detail items as well as running gear is not supplied, but can be acquired via your local hobby shop and Prototype dealer.

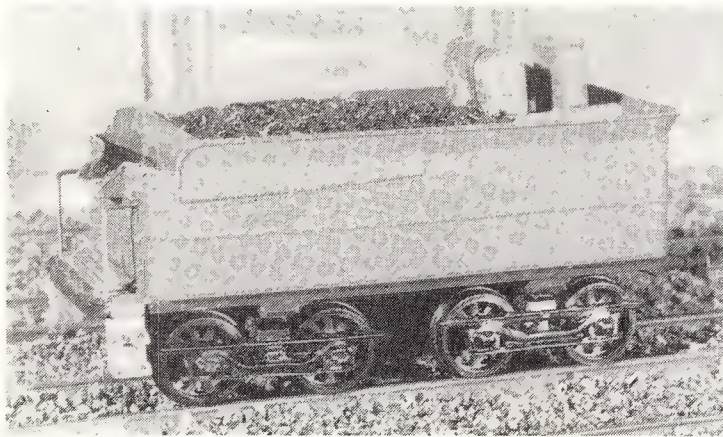
Special feature of this kit is the automatic (motor driven) power gear shift, where a motor is used to power a mechanism that changes the direction of the locomotive. Ready cut gears are provided to enable this mechanical phenomenon to be accomplished.

In essence this kit is a 'model engineering' project, and would be ideal for any modeller to learn how to build his own 'brass' engine. Access to a lathe would be essential. An unusual product in this day and age when we all expect the difficult tasks to be accomplished by the manufacture, but a kit assembly instructions and attention to detail has been given a high priority. The drawings have been completed to engineering erecting shop standard.

Bob Gallagher

NSWGR Baldwin Tender kit, in HO scale. Our sample supplied by the manufacturer ABL Model Products, P.O. Box 56, Miller, 2168. Price: \$21.00.

The significance of the latter day use of Baldwin tenders is explained in some depth in Ron Preston's book 'Tender Into Tank'. Basically they were made redundant through scrapping of the Z21, Z22, Z28 and Z29 classes of locomotives and fitted to Z12 class, Z30T's and Z19 class locomotives for use on light branch lines.



In the case of the 19 class the original 6 wheel tender could not negotiate tight curves when running tender first and the replacement tenders proved ideal for the purpose, as well as providing a larger water capacity.

The kit under review is of the Z21 class of tender. The components which make up the body shell of the kit are epoxy, whilst the wheels, bogies, buffers, etc. are metal. The body was assembled as per the instruction sheet by tacking first with a super glue (Mr. Repco's one!) and, when square, reinforcing all joints with a fillet of Araldite (I used Repco Woodhill 5 minute Epoxy).

Each wheel is insulated at its axle, and to obtain electrical pick-up the modeller must short-out this insulation on one wheel of each axle. This is achieved by drilling through the insulation and inserting a pin to form a snug fit. The excess pin must be cut off. Care must be taken when assembling the bogies in that all uninsulated wheels are to the same side of the tender — in this case the driver's side (left). It will also be necessary to file notches in the bogie spreader bar to allow the wheels to turn. The bogies are then fixed to the brass covered floor by way of spring tensioned screws and nuts. The kit does not contain a loco mounting pin; this is left to the modeller to devise to conform with his own particular type/brand of loco.

I had a bit of trouble interpreting the diagram relating to the pipes between the various tanks on top of the tender. Fortunately I had (in accordance with the instructions) a copy of the NSWRTM Locomotive Guide for pictorial reference. I hope it's still available!

Generally the kit assembles with little difficulty. The quality of some of the epoxy castings — in the review sample — did not come up to par with others of this kit I have seen assembled. Dimensions appear to be within accepted tolerances, so far as I was able to ascertain.

I would expect that this kit is primarily intended for the modeller wishing to convert his/her 19 class for branch line use, although modellers of its original class allocation would no doubt find a good use for it too. Likewise it could be fitted to some 12 class models or 30Ts.

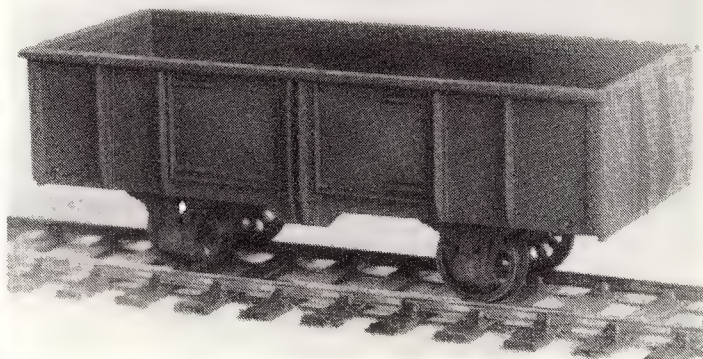
Allan Brown

K truck kit in HO scale by Trax Model Products. Price: \$5.50 each or in packs of six for \$30.00.

The NSWGR K truck was a 1920s development in open wagons, designed to lift the payload/tare ratio above that of the ubiquitous S truck. The K (and its close relative, the U) was all-steel 22' long over body on an 11'6" wheelbase, a big four-wheel truck, the tracking qualities of which were far from ideal. Nevertheless, hundreds of K and U wagons were built by Waddingtons and Goninans, and they became quite as ubiquitous as their predecessors, in all manner of service applications, from the early 1930s until their fairly rapid demise in the 1970s.

As built the K featured built-up ends, with angle-iron vertical braces. As wear and tear took their toll, these ends were replaced from the 1950s by one-piece steel pressings with formed-in strengthening corrugations. Side doors were outward-opening 'cupboard-door' type, with a characteristic diagonal cross pressed in for reinforcement purposes. (Early wagons, possibly prototypes, differed in this matter.) The very similar U truck differed principally in having, in place of the plain boarded floor of the K, eight hopper openings for the discharge of grain and similar loading. These hoppers were not very apparent from the top, as the covering trap doors were planked, but of course the hoppers were a prominent feature of the underside. Early wagons had buffers, but these were removed during the 1930s.

The Trax kit features the original style of end. The



polystyrene mouldings, consisting of sides, ends, floor and two underframes, are clean, with crisp detail, both inside and outside the body. Rivet detail is of a good size, and the planked floor is well represented. Sides and ends fit together well (best assembled upside down, so that the top edge reinforcing is level all the way round), and dimensions are commendably accurate with the exception of the height, the sides being some 4" too low, and the width of the top reinforcing on the sides, which is too wide. These minor discrepancies do not detract seriously from the appearance of the finished model.

The kit has two serious weaknesses. Firstly (and this is, regrettably, common to other Australian plastic kits) there is absolutely no below floor detail — brake blocks and hangers, air tank, brake cylinder, triple valve and handbrake mechanism have all to be supplied by the purchaser. For the record the air tank/brake cylinder were a single unit (apparently Westinghouse type C), mounted along the central axis and sloping up towards the handbrake end of the wagon. (See photo of U wagon.) This type of unit is available from Kemtron (Walthers No. 390-3216), while brakeblocks and hangers are available from several U.S. manufacturers (e.g. Kemtron 390-1438). The characteristic stirrup steps are available from Grandt Line (300-5130) and handrails from Alexander Scale Models (120-3502) or Walthers (933-840U). Obtaining all these bits separately is a nuisance and it is unfortunate that Australian manufacturers do not seem to have learned the lesson which took so long to sink into their overseas counterparts: that there is more to a wagon than a body and wheels.

The second major drawback is basic and affects construction: the tops of the underframes need thinning to fit into the recesses provided in the floor. Such thinning MUST be carried out to the OUTSIDE of the underframe, and may be accomplished with a coarse file and/or wet and dry paper. When the underframes fit neatly into the slots and the axleguards are correctly vertical on both sides, ONLY wheels on 25mm axles will fit properly. If you use US standard 25.5mm or British standard 26mm pinpoint axles, you will need to deepen the axle holes by careful drilling, but do take it gently. If you use brass bearings, as most serious modellers do, you will need to use wheels with the shortest possible axle (e.g. Mansfield) and still the distance between underframes will need opening out by about 2mm, a task which must be done before any assembly is attempted, by filing/sanding back the outside top of each underframe by 1mm or so and then removing most of the floor locating ridge on both body sides (careful use of an Xacto No. 17 blade will do this neatly), leaving just 3mm at each end to support the floor. This allows the underframes to be pressed out against the bodysides and gives sufficient distance between axle bearings, which must nevertheless be recessed so as to fit flush with the rear of the axle-

guards. When these modifications are done, assembly is easy, and a good-looking basis for further detailing emerges. Instructions are very basic, adequate for assembly but nothing more, and a reasonable quality drawing, photo and numbering information should not be beyond the manufacturer; they are essential if a correctly detailed model is to be built. No provision is made for the fitting of couplers, and a small rectangle has to be cut out of each end to allow the fitting of Kadee No. 5 couplers, which need to be packed down from the floor with one or two thicknesses of styrene.

Despite the reservations expressed, this is a good kit, and every modeller of post-1930 NSWGR will need several, for photos show that any goods train until the late 1970s included a K or two, frequently sheeted, always, in later days, with a distinct bow to the sides, sign of many years' hard work!

Sample numbers include: 24090, 17027, 23465, 23767, 27166, 23413, 11656, 25463, 25510, 23590, 9807, 23551, 23882, 24766, 25395, 11666, 24040, 27668, 23534, 23627, 27183, 27020, 23581, 24854, 23417, 25521, 16984, 23636, 17274, 27719, 26925, 23645.

Ian Dunn

Hopper Coal Wagons, a diagram book by the State Rail Authority of New South Wales (Archives Section — B3 Transport House), York Street, Sydney. Price: \$4.50.

This book follows the production of the goods wagons diagram book and the structure diagram book, and the subject of this 340mm x 215mm, 37 page book is (basically) coal hoppers of the old four wheel style, both government and private owned units, ballast wagons, ash wagons and (coal type) brake vans. Unfortunately the book does not cover any of the subject fully, but probably includes only those diagrams still on record.

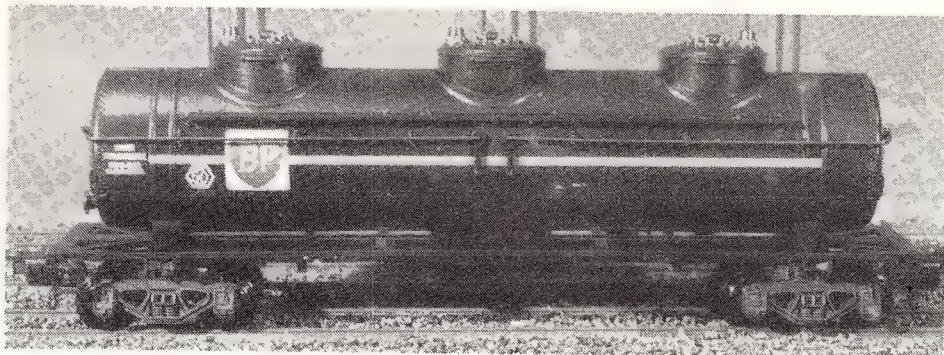
The diagrams are very basic, but in the case of the government owned hoppers, dimension and scale appears to be accurate. Some interesting aspects of the book is the inclusion of the diagrams on the very early 'LCH' style of hopper, the 'MH' ballast hopper, the early appearance of the 'CHG' guards van and the various styles of the early ballast and ash hoppers as used by the NSWGR. The disappointment is the lack of range of the hoppers from the private sector, where it is well known that many varied sizes and styles existed.

For the modeller who is interested in early period NSWGR or the coal transportation industry this book will be of great help.

Bob Gallagher

BP 3 dome oil tanker in HO scale by Lima. Sample supplied by Southern Models, 63 Boothby St., Panorama, S.A. Price: \$10.50.

This model is the standard 3 dome oil tanker, designed upon American lines, that has been re-





painted and lettered to the style carried by British Petroleum (BP) tankers in New South Wales. The model, painted in Exxon colours was reviewed in the November/December 1980 issue which described it as a 38'3" long, 7'9" diameter rivetted tank on a 41'6" long underframe. American styled it has a handrail around the girth of the tank and a rather coarse ladder extending from the underframe up to the underside of the platform. Rivet detail, handrails and hatch detail is up to the standard Lima continue to maintain. The model is fitted with bettendorf old style bogies with plastic 33" wheels, which are to NEM standard and as such have the usual (deep) Lima flange. The Lima couplers are attached to the bogies.

While the tanker is not representative of any one specific wagon on the BP roster, it is within the size range of the BP 9,000 gal to 10,000 gal tanker. It has the 5" yellow stripe along the tank side and the '3' square within which the synonymous green BP shield is positioned. Other lettering includes the fact that the load is highly inflammable, and has a capacity of 10,455 gals, and it has the 50 mph speed restriction sign in white (whereas it should be yellow). The colouring is acceptable, the yellow being a little pale, which is a rather common complaint with other Lima models. All screening, however is well produced in that it is very sharp.

The disappointing aspect of this model however is the price, which is above the average for any other ready to run tanker, and very near the price of a passenger car. Regardless, a nice model, that could be given an Australian appearance without damaging the paintwork.

Bob Gallagher

Corrugated Card, for HO/OO scale by Broad Gauge Bodies (BGB), P.O. Box 6, Marden, 5070. Price: \$1.50.

One of the materials used in the BGB range of kits is the corrugated card usually being supplied for the roof. The card is now available in packs of 12 sheets, supplied packed in a poly bag with a card top. The sheets are 203mm long by 70mm wide and the roll formed corrugations are spaced 1.1mm apart which works out to be about 2 inch (50mm) corrugations.

The corrugated impressions are clearly formed, although the edges can be smoothed out with rough handling. Generally the card is free of burrs unless it is cut with a dull edge. While paint is absorbed into the card surface this can be an asset when weathering the surface. The card is ideally suited for large structures where masses of corrugated iron is required. It can be suitably secured in place with a PVA glue or one of the contact cements.

A useful product.

Bob Gallagher

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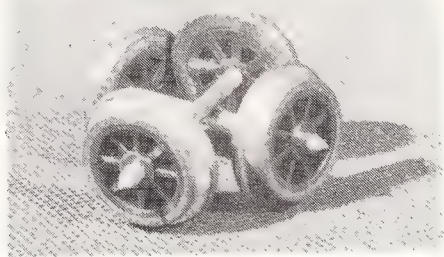
S

Decals for lettering, numerals and striping in HO scale by Mn'J Decals who also supplied the samples. Price: \$1.50 per sheet.

Within the scope of the model railway hobby there is often the need to detail a model with numerals, lettering or strips. The application need not be to a piece of rolling stock, but to buildings, signs or road vehicles. Mn'J have made provision with 30 sheets

that cover letters/numerals in both Serif and Sans Serif character face and strips in ten colours. The letters range from 12" down to 4" high and the stripes range from 2" wide up to 8" wide. Colour range includes black, white, yellow, gold, silver, red, orange, blue, light blue and green. Sheets are 233mm x 70mm and the face of the sheets is almost covered with decals. Separation from the backing sheet was not as good as expected for at least 20 seconds were required to soak the paper off the decal, which then adhered to the surface well. A little care is needed when handling these decals, and a covering coat of clear lacquer should be applied to protect the decal surface.

Bob Gallagher



10.5mm spoked wheels in HO/OO gauge by AMRI. Samples supplied by St. George Hobbies and Casula Hobbies. Price: \$1.85 set 2 axles.

Two pairs of 10.5mm diameter spoked wheels were submitted for review. They have moulded plastic spokes on metal pin-pointed axles, and blackened metal rims.

They were measured against both AMRA and NMRA standards and they conformed to neither. As presented they were nearly a third of a millimetre over gauge and were thus likely to catch the crossing nose of turnouts. They were easily pressed in to conform to the NMRA Wheel Check Gauge though. Of more serious concern were a number of other departures from standards. Following is a list of the major discrepancies, compared with the applicable NMRA standard:

	AMRI Wheel	NMRA Stds
Flange Width	1.0mm	0.86mm
Flange Depth	0.9mm	0.63mm
Rake on front of Flange	0°	30° (approx.)
Rake on rear of Flange	0°	5° (approx.)
Tyre Width	3.0mm	2.79mm
Wheel Check Gauge (as presented)	15.56mm	15.24mm max.
Axle length to pin points	26.1 & 25.8	26.0

The coning of the axle ends was correct at 55°.

The excessive thickness of the flanges will have most effect on the wheels' usefulness and reliability. Put into perspective it may be worth noting that the NMRA flange of 0.86mm is the thickest of all HO/OO standards. Most British wheels are made with flanges around 0.75mm thick, and European wheels (Lima, etc.) are usually 0.7mm. The AMRI flange could bind in the wingrails of turnouts. When pressed into the correct WCG the back to back was reduced to 14.3mm, below the NMRA absolute of 14.38mm. This restricted clearance may also cause binding over checkrails and wingrails when running through turnouts. After re-gauging, both wheel pairs were assembled into a 10'-3" wheelbase underframe. Considerable binding did occur in turnouts. Assembled into a longer wheelbase frame they could also bind on moderate curves.

The lack of taper back and front of flanges gives the wheels little more than hope of being guided past rail irregularities such as points and misaligned rail joints.

The distance over axle points on one axle of 26.1mm being over the accepted British and American standard of 26.0mm could cause some frustrations to modellers trying to fit them into standard underframes, though that situation exists now to some degree with the present three different axle lengths of the other three brands of 10.5mm spoked wheels now on the market. That the other axle measured underlength it is a moot point though whether the frustration will be caused more by an overlength axle or by the inconsistency of lengths. After setting the bearings in an underframe for one axle it would be very frustrating to discover that the other axle jammed or was excessively loose.

In appearance the spokes are nicely formed but the metal plus plastic rim thickness of six scale inches is fifty percent oversize for normal prototype practice. This seems now to be becoming an unnecessary

trend.

The wheel profile leaves so much to be desired they are not recommended for the Australian market.

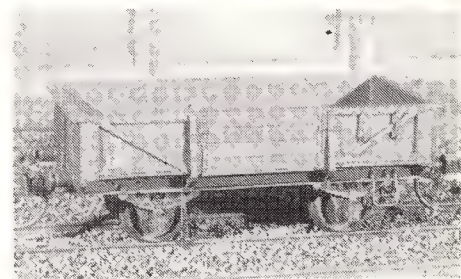
Ross Hurley

S.R.A. Locomotives, a Railmac Publication. Copy supplied by St. George Hobbies, 504 Rocky Point Rd., Sans Souci, 2219. Price: \$1.50

This 20 page, card cover 150mm x 214mm booklet covers, very briefly, the diesel and electric locomotives in use on the State Rail Authority of New South Wales system. Each locomotive class is covered with a very short description and a photograph, which not necessarily assists in identification of the class. The written description does not deal with major or minor differences within the class, but it does helpfully list the locomotives on the books during 1981. Most locos are illustrated except the popular 42 class.

A well produced little booklet, which would be of help as a 'Diesel Spotters Guide' to those new to the S.R.A. system.

Bob Gallagher



A workshop 'S' wagon decaled with Mn'J decals

Decals for NSW 'S' wagon, in HO scale by Mn'J Decals, who supplied the sample. Price: \$1.00.

With the influx of the injection moulded kit the need is great for components to complete the wagon. Mn'J have helped in this vein by supplying (Part No. 2322) decals for lettering the 'S' wagon. Included on the 84mm x 70mm sheet is enough white decals to letter six 'S' wagons or three 'SO' wagons and three 'SO' wagons. The detail is not limited to the class code and numerals, but also includes the tare/capacity lettering in lower and upper case and suitable numerals to add the tonnage, and to also number the underframe.

The decals are easily applied by following the instructions printed on the rear of the packaging flap and the transfer from backing paper to model could be described as excellent. The main letters/numerals scale out at 6" high, just right for detailing 'S' wagons. A fine product, that sticks in place.

Bob Gallagher

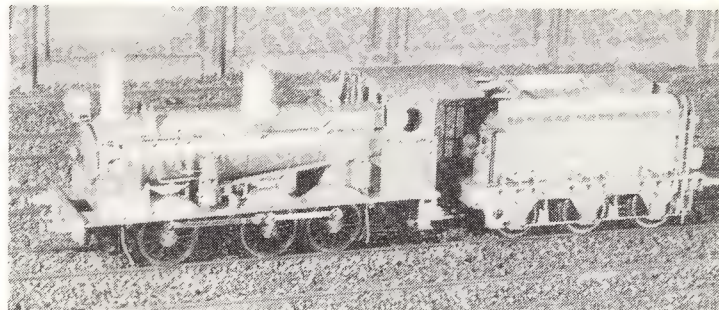
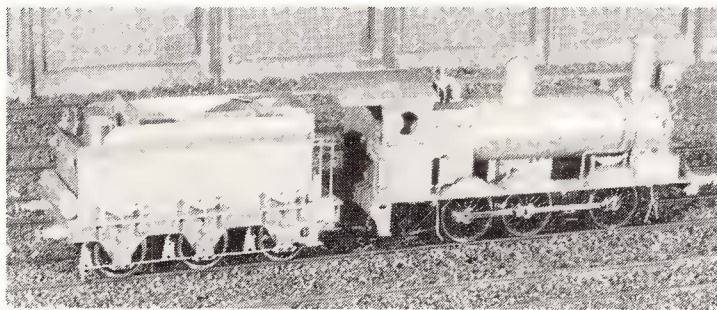
South Australian Diesel Pictorial by Douglas A. Colquhoun. Published by the Mile End Railway Museum (S.A.) Inc. P.O. Box 61, Roseworthy, S.A., 5371. Price: \$5.25.

Although this is the first book by Douglas A. Colquhoun, he has been involved in at least four other books pertaining to South Australian railway action, and his name under a photograph is synonymous with a quality photograph in subject and reproduction. This 80 page, card cover, 215mm x 275mm book is jammed with photographs that illustrate diesel action in South Australia, covering standard, broad and narrow gauge as well as power units from all Government and private systems that run in South Australia.

The author has solicited the assistance of 25 other photographers to fully cover a lot of action in a small system. Some of the photographs, while not being of equal quality to others have been included no doubt for the unusual subject. One in particular that comes to mind is the train with ten locomotives up front (only three working).

The general standard of the photographs is high, very few 'arty' shots being used so the modeller can find the book helpful for detail research. Again generally the transfer from photograph to the printed page was accomplished with only a little loss in quality.

For a modeller, the South Australian system has always had appeal for it is a small system and these days has been well catered for by commercial interests. This book highlights the diesel era and a discerning modeller will find the many photographs of valuable assistance in train consist and scenic detailing. For those not interested in modelling the South Australian scene the book is of interest, for its inclusion of inter-system running. The cover alone is worth the price of the publication, for the popular 900 class is illustrated in colour hauling a set of green and



cream coaches.

A superb publication that would be welcome on any railway enthusiast's bookshelf.

Bob Gallagher

Z19 class locomotive of the NSWGR in HO scale. Imported by Bergs Hobbies, 261 Church Street, Parramatta, 2150. Price: \$250.00.

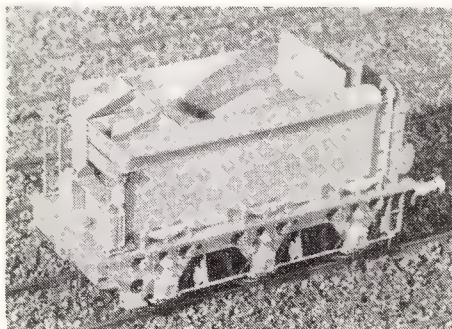
The O-6-0 Z19 class was issued to traffic in 1877 and was one of the last classes to be eliminated by diesel traction in the 1970s. As issued, a main line goods engine it saw many duties over its lifespan including working the steep Dorrigo, Oberon and Batlow branches, coal working and of course the 'work horse' at Darling Harbour. The class developed as a 'cult' loco as steam disappeared from the scene.

The Z19 was a 'surprise' packaged from Bergs Hobbies, the first public knowledge of the impending model being the display of the 'final pilot' at the Blacktown Exhibition in June 1981.

The model represents the porthole cab version of the rebuilt 93 class fitted with an ex-Z15 class type tender rebuilt and used by various Z19 class locomotives during their varied lifetime. 1945, 1955, 1915, 1919 and 1904 are among the known locomotives to have worked with this style of tender.

Crafted in Korea, this well made, highly detailed model of the O-6-0 vintage steam engine is powered by a Sagami motor enclosed in the boiler firebox, driving the centre driving axle via an enclosed gearbox, the lower edge of which fouls rails at points and crossings and has to be filed down to allow suitable clearance. The review sample ran smoothly, if not a little noisily, in both directions.

Detail standard is very high and has been formed via photo etching and lost wax casting all of which is sturdily attached in the correct position. The size, shape and sharpness of most detail items is excellent by any standards and included headlight, sand boxes with inspection plates bolted on, whistle, electric generator (with exhaust), air pump fitted with air filter and gate valve on air lines leaving the pump and well detailed and form springs. Each wheel is fitted with brake shoes and sand pipes to leading and trailing wheelsets, and the brake cylinders fitted under the cab floor are attached to the brake shoes via levers and rods. The boiler back plate detail is engraved onto the plate which extends too far into the cab, but it does hide the rear of the motor. The cab is also fitted with the engine hand brake and two fireman seats, which is, according to some records, one seat too many. (A feature of the Z19 class was the fireman's seat which hung down when not in use but was swung up into position, outside the cab when required... see Tender into Tank by Preston.) Some loco detail is not correctly proportioned and these items include the funnel (insufficient taper), dome (too high), buffers (incorrect shape), marker lights (too small) and the smokebox door handle (too small).



Dimensionally the locomotive is very accurate, with only a few variations from 'dead accurate', one being that the footplate is a shade lower than it should be, reducing the height of the loco by a very small margin which in itself is not a problem. The cab porthole window however is too small, it being only 75% of the correct size, and it is incorrectly positioned on a cab side that is 7% too low. The cab side is not correctly formed which is not helped by the point that the roof seems too wide which in turn is caused by the cab being too narrow. (It is possible here that the plan of the Z19 in original condition was used, for all dimensions accurately relate to the Data Sheet plan of class 93 as built. The Z19, as class 93 became, had a rebuilt cab which was wider and higher.)

The tender appears to be accurately formed and is proportionally correct except that the top rear coal plate is incorrectly positioned (it should be 18" closer to the cab end of the tender), and the rear corners of the tender have been 'bent' instead of being squarely formed from three sections of metal. Detail however is well formed and strongly positioned except for the buffers are incorrectly shaped. The coupler pocket is correct size and shape for Kadee No. 5 and screws are provided.

Coupled together, the units undoubtedly represent the Z19 class, but the height of the cab, when coupled to the slight lowness of the footplate and the incorrect proportioned stack and dome spoil the overall effect of the model, for it is well made and beautifully detailed. One other ugly aspect is the distance between loco and tender which is 9mm when using the closest of the two holes in the drawbar. Thankfully this is easily remedied. The model is painted in the usual 'gold' paint which should be removed before painting.

The surprise aspect of this model may have been its downfall, for it is quite evident that someone, somewhere, incorrectly prepared the construction details, something that should not happen. These days the correct information is available and there are many modellers and or enthusiasts who are only willing to supply details to enable the correct production of these now rather expensive models. By comparison with both versions of the D59 which has recently come from the Bergs stable, the Z19 cannot be considered a great model, although it will undoubtedly be purchased and treasured by many modellers, and will be a ready workhorse on small trains after it has been suitably painted black and weighted.

Bob Gallagher.

C66 INSTANT HOBBY GLUE by AERO-FLYTE. My sample supplied by St. George Hobbies, 504 Rocky Point Rd., Sans Souci. Price: \$4.00

This adhesive is another release in the growing family of 'Superglues'. It is produced by the AERO-FLYTE company which is a manufacturing group producing items for the flying model aeroplane hobby. However the glue has one attribute which will make it popular with all modellers in that it is designed to be primarily a wood glue.

In this its manufacturers succeed admirably. The glue takes to timber in an instant and produces a strong bond. It has the normal problem associated with all superglues in that it seals the timber pores and therefore will prevent staining of the timber during painting and weathering but this is a small

Z19 Class by Bergs Hobbies.

price to pay for the convenience of superglues.

Apart from wood the glue will perform all the usual tasks of superglues. I have used it to bond timber to timber, timber to metal and styrene, metal to metal, styrene to just about everything and of course fingers to fingers. In all cases the glue was quick acting and produced a strong bond.

Overall then, this is an excellent addition to the range of glues available and one which should prove popular with any modeller who works in wood and will be doubly popular with those impatient modellers such as myself who hate waiting for glues to dry.

Ron Cunninghamham

1982 Calendar. Issued by the NSW Rail Transport Museum, Thirlmere, or the Sales Office, 2/15a Belmore Street, Burwood 2134. Price: \$3.40 or \$4.00 posted.

The Museum's 1982 calendar is again to the familiar size of 280mm x 380mm (11" x 15"), naturally in full colour. The full size cover shot shows 3214 rolling to a smoky stop at Helensburgh with an up Illawarra passenger (4 heavyweight cars) in 1964. The back photo, around three-quarter size, shows 3827 in refuge at the loop at Tarana in 1969.

Of the twelve interior photos (one for each month) eleven are to the normal horizontal plane and one to the vertical — alas, so sadly missed last year. All shots are to be standard size of 260mm x 175mm (10" x 7"). Nine of the shots depict various classes of locos on different workings throughout the state. The other three shots have some form of diesel electric motive power contained therein, either inclusive with steam or individually. For instance, May shows 4204 and 4203 on a down stock special crossing with 3638 on an up goods at Mittagong in 1968. September has double 59s in refuge at Kolodong for double 45s on an interstate container express bound for Brisbane. The vertical shot (March) shows DP101 and three cars ex Silver City Comet running as the Forbes connection off the down Central West Express, near Manildra. A very pleasing picture indeed.

Yet out of all this there is a noticeable difference in this calendar and it took a while to figure out just what it is. There are no 'arty' shots! Just about everything in the calendar has some benefit to the modeller, whether it be the location of the red lines on 3638 in May, the wagon consists and loadings behind the 59s and 45s in September, or simply the wooden trestle bridge in August, each shot contains some form of modelling assistance. Of course we can't overlook December's shot of our beloved flower, the calliopsis — the plague of hay fever sufferers.

All in all I feel that the 1982 is just that little bit better than past issues, not only for the reasons already mentioned but also because the ultimate transition to total dieselisation is being presented in a moderate and aesthetic fashion.

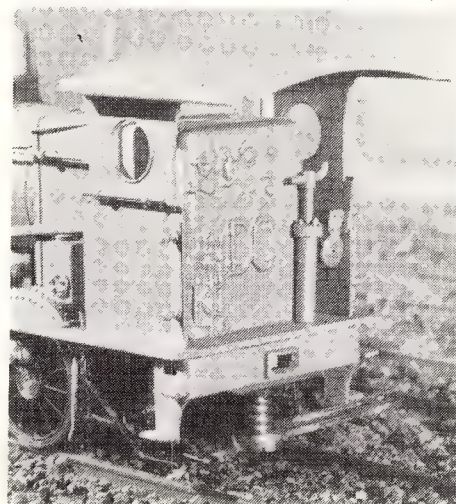
The one fault with the calendar however, is that it does not have a hole on which to hang it. I have it on good authority that these will be supplied as an optional extra, to be inserted by the purchaser if he so desires. Still, a top publication and a definite must.

Allan Brown

Regrettable, due to a lack of space a number of reviews had to be held over to next issue, including Lima's VFNX and Hornby 'Zero One'. Any inconvenience to suppliers or reviewers is regretted.
(Editor).

CONVENTION

SYDNEY: NSW October 31, November 1 at Camp Saunders Conference Centre, Macquarie Fields. For further details contact D. Meredith (02) 579 3791 or P. Knife (046) 26 5665 or write to 2B Percival St, Penshurst 2222.

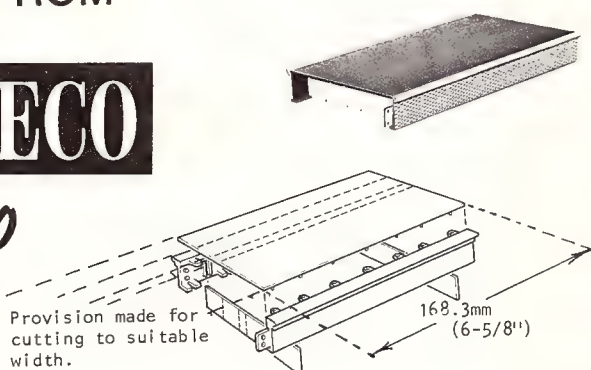


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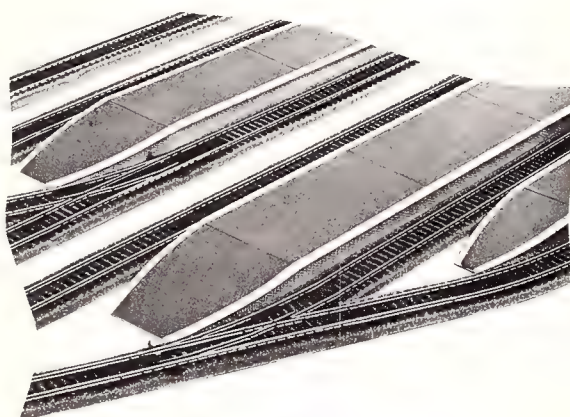
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HO/00



ST-290 Platform System \$3.35

The Platform Kit ST-290 contains two sections of brick faced island platform each 168.3mm (6-5/8") long with simulated bitumous surfaced top. The underside of tops is grooved so that four different platform widths are readily obtainable.



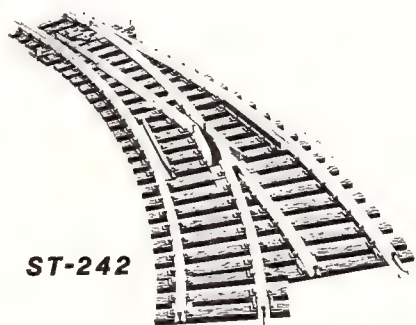
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Notes from A.M.C.

The Federal Budget increased Sales Tax on Model Railway Equipment by 2½% and this will - eventually - find its way into the price to you of such equipment. For the time being, we are absorbing this increase, and it will only be taken into account when prices in each trade brand or category are next being reviewed. The proposals for sales tax to apply on hand tools, books and magazines etc. from 1st January 1982, will need to await the outcome of trade objections and the Government's final decision, and later advice will be forthcoming.

"MODEL RAILWAY NEWSLETTER" has ceased to be available by subscription. Copies of each issue are available through all our normal dealers who don't want to sell it, but are prepared to give copies away. We

don't charge for it, so we don't expect retailers to charge you. It is also available through the Melbourne Model Railway Society, A.C.T. Model Railway Society and such other Clubs and Associations who make arrangements with us. Copies are sent to our own mail order customers.

We are incorporating a number of former price lists into a small booklet for our stock "Service Division" which will also contain hints and tips of use to modellers. If this goes together OK we will amalgamate in the same way all the lines concerned with "The Scenic Side of HO/00" and then take it from there. Keep asking for the latest lot of printed matter, which bears the insignia shown at the left. On pricing, in the main 1980 Price Lists are still current.

AMC
DISTRIBUTED PRODUCTS

This issue sees a slight change from the normal in two ways. If all has gone according to plan this issue will be of 80 pages, a record for AMRM. The other is that while we will still remain a bi-monthly issue, the description of each issue will be changing. This is not due to any radicalism in the editorial ranks but to Australia Post, who have not only given us a number but have insisted that the month of publication **only** be printed on the cover. While this applies from this issue, we have retained the September/October description on the page folios and will continue to do so until our prepared typesetting has been used up.

Despite this we will, from now on, be officially producing issues in February, April, June, August, October and December. The release date should be the first of the month, but until advertising deadlines can be adjusted the release date will be the Friday closest to the first of the month, this primarily being dictated by the volunteer labour that packs the hobby shop copies of the magazine.

Readers Survey

While not revealing any details, yet, of the survey where readers were invited to select the model they would like to see on the market (page 53 last issue), the response has been encouraging. In years past there has never been sufficient response for any conclusions to be drawn, as the numbers were too small. This will not be the case this time, readers who have not yet sent in their submission can still do so. The results will not be tabulated until the end of October, 1981, although genuine manufacturer interest will be fulfilled.

Plastic Kits

A little over a year ago many modellers were very vocal about the quality of the then available kits on the Australian market. All on the complaining side of the debate seemed to imply that the kits (that were available) just did not maintain or reach the standard they required and in turn seemed to imply that all could be fixed with a better application by the manufacturer, and better manufacturing process.

Well it is now over a year since the first injection moulded kit arrived on the market for both HO and N scale modellers. AMRM has expressed an opinion of the standard reached as well as the good and bad points, but what about you the reader?

Are you happy with the standard of the locally produced or imported rolling stock kits, especially those made by the injection moulded process? Were you unhappy with the old kits and have become satisfied with the new? If not, why not? Are you buying the new product? Are you unhappy with the new models?

For an unspecified period AMRM will seek opinions of readers and print the letters in Mailbag. We would especially like to hear from those readers who were so vocal on the local prototype manufacturing debate last time.

Broad Gauge who?

Up until mid 1980, the broad gauge modellers of VR and S.A.R. were left out in the cold, so far as manufacturers were concerned (no doubt the smallness in numbers being a main reason). But who would have expected two different organisations to develop and register names as similar as Broad Gauge Models and Broad Gauge Bodies in such a short period. The similarity in names has already caused problems to some modellers (as does AMRA and AMRM, who have nothing to do with each other), to a point where letters are being sent to one organisation with a cheque made out for the other. May we suggest that readers consider 'BGB' a suitable name reference for Broad Gauge Bodies and Broad Gauge Models for itself to try and avoid the confusion.

Something New!

One of the pleasurable aspects of being involved with this magazine is to have the opportunity to observe the growth of the local industry, and over the past seven years we have seen quite a few exciting projects launched by Australian modellers. We now see what can be accurately described as the closest thing to a shake the box kit emerging onto the market. Produced by Stephen Johnson, the 'kits' are basically two parts, a body and a floor. Both are fully detailed. The body includes roof ventilators, and steps, side steps, etc., etc. ... everything one would expect to see on a multipiece kit, and then some. The floor has cast in place all underbody detail including generator battery boxes, detailed both sides. The only cleaning up is required when fitting the floor. Painting, adding handrails, and whitening out the correct toilet

window on the cast in glass, as well as adding bogies is the only task a modeller will be expected to make. The first in this style of kit is the 'SHG/BHG' and 'HCX' vans as used on the NSWGR.

Of course with anything good there is always a catch, and no doubt the one with these kits will be the limited production on each model, for despite all attempts in past and present, local producers of epoxy kits are unable to produce quality models in sufficient quantity to satisfy market demand.

Personalities

The model railway hobby, like most other aspects of life, has its personalities that stand out for one reason or other. The retail side of the hobby is enriched with them and it is not unusual for newcomers to the business to make a sudden impact on the hobby for their new marketing technique. Bruce Allison, from the Hobby Warehouse in Brisbane, is one such personality, and one who many will see on the TV screen in 1982, for Bruce, once a full time (auto) racing driver in the U.K. has taken up his first love again in Australia and won the National Panasonic Formula Pacific series of four races in 1981. Although 'the Flying Toyman', as TV commentators call Bruce, did not win a race in the series he was consistent enough to gain sufficient points to win the series. Congratulations to Bruce and the 'Scaletric' sponsored 'Flying Toyman'.

Commercial News

A couple of new names are emerging on the New South Wales scene with 'Craftsman Models', 'Main West Models' and 'Camco'. 'Craftsman Models', who once produced the etched brass LLV/GLV louver van, will be the name used by Ray Pilgrim (of Z26 class fame) to market his etched brass components. 'Main West Models' is the new name to be used for marketing products made at present under the Casula Hobbies name, and 'Camco', a new identity on the scene, will be producing a few surprises in 1981.

Craftsman Models advise the temporary withdrawal of the Z26 class loco kit (HO) but the good news is the production of a run of an etched brass kit for a Z13 class 4-4-2 tank loco (HO), and a set of detail components to detail the (second series) Lima 44 class (HO).

Mansfield Hobbies has released a run of metal castings for a NSWGR water crane and torpedo roof vents. Also available are packets of brass buffers for goods wagons.

The demand for the water jinn kit has been so great that ABL Models has been limited in production of other kits, including the BD which was reviewed in July/August 1981 AMRM. However, as these notes were being prepared, a number of 48 class kits (HO scale, epoxy castings) should be available for the Sydney Model Railway Exhibition. South Australian Railway modellers can take heart for ABL plans to release the kit, suitably modified, as an 830 class diesel. At present some complications have arisen with the floor but some 48 class kits are expected at the exhibition, the 830 class to follow later. The mechanism for driving the Alco diesel is the Mehanotecnica 628 loco bogies.

Model Dockyard advises that a few models of the AD60 garratt (HO) are still available on a first come first served basis. They are also planning another run of the Victorian Railways 'R' class (HO) on the 'to order' only basis, so any modeller interested in the ready to run model (see page 2) contact Model Dockyard immediately. The model will not be available as an off-the-shelf product.

Trax has released the 'RU' four wheel grain hopper kit and the early version 'K' wagon kit, both as HO models in injection moulded styrene. The next planned kit is the BCW cattle wagon (HO) and the MBC box van, not expected until late 1981.

Rails North Models has continued on producing fine kits in epoxy castings for HO modellers and has recently released the 28 ton version MLV louver van. Being prepared for production is the CLX louver van and the OCY container flat wagon.

Broad Gauge Models has some of the extensive Railcraft range available and at the time of going to press was in the final preparation stages of releasing its branch line station (VR) kit for HO modellers. Also planned for the future is a pioneer cottage kit, cast in epoxy.

Stephen Johnson has been busy and as well as preparing some new models for ABL to produce (i.e. the BDL/BDX), has had the 400 class railmotor kit closer to release. As we went to press samples of a BHG/SHG guards van kit and a HCX composite van kit came to hand. The exciting aspect of these two kits

is that they are one piece body kits. Some casting flaws were evident in the samples, but they were the first castings out of the mould. We can certainly look forward to some very fine models that need little assembly. There is no truth in the rumour that these new style of kits were produced to save the manufacturer from supplying assembly instruction sheets!

Modellers of the broad gauge, in HO scale can look forward to some frenzied purchasing soon, for we have been advised that a model of the ubiquitous 'GY' is on its way, at last. Early to mid 1982 should see it on the market.

Southern Models has released Lima's 'BP' three dome tanker, and the VR 'VFNX' covered flat wagon.

Northside Hobbies currently has a good selection of the SPUD (Self Propelled Universal Drive) units which are making such an impact in America. For the British modeller Bergs Hobbies has a few of the new Mainline Manor class of locomotive. On initial impressions they look good.

'N' scale modellers waiting for the Con-Cor 'RDC' railcar, should be satisfied soon. Punchbowl Hobbies sold the few they had in stock very quickly, but they expect more, and included on the list of shops expecting the 'RDC' is J & J Hobbies and Northside Hobbies.

Speaking of RDC rail cars, Punchbowl Hobbies has a supply of Athearn bodies for HO models, both the RDC 1 and RDC 3 (combine) are available. Punchbowl can also illustrate an unusual drive for the normally Hi-Fi driven RDC, and no doubt can supply the parts.

Modellers seeking U.S. prototype models from the Lima range should keep their eyes open for some Model Power models, for this is the brand used to release some Lima models onto the American market. St. George Hobbies have some locos including the Century 420.

As indicated last issue Broad Gauge Bodies (BGB) released the VR 'BFL/BLX' van kit which included decals, and the SAR 'R' van followed again with decals. The inclusion of decals will be a regular feature of BGB kits in the future. BGB are also planning to make available decals for the present range of kits, those for the SAR M/MG/MRP already being available. Other decals new from BGB include a sheet of white, and a sheet of black large 'VR' emblem, enough for two vans while decals for SAR tarpaulins are being prepared. On the kit scene BGB should have released a 20' x 40' corrugated iron, curved roof goods shed by the time this issue appears. A rather common structure in South Australia this kit will be the first in the BGB structure range. Rolling stock kits have not been forgotten for a (HO scale) VR 'VLF/VLX' louver van is planned for the very near future, and work is progressing on the next billboard van kit.

While on the subject of kits it is interesting to learn that McBees Hobbies plan to release a (HO scale) kit of the VR 'ZF' guards van. No specific release date has been indicated.

As these notes were being finalised, we had the opportunity to see samples of the Z13 class etchings from Craftsman Models and the MLV and CLX early production samples from Rails North. All showed superb quality in detail as did the production samples of the 80 class diesel body from Main West Models. It is expected that all these kits will be on the market by October, when this issue is published. No doubt further detail will be supplied when the AMRM review section has the opportunity to inspect the complete kits.

For modellers interested in 'real' model building, D. G. Hoskins of Mittagong can be of help for he has prepared a 'kit' of parts, including a very detailed step by step process to build a HO scale C36.

To hand a few samples of PJM diesel loco body kits, which feature Victorian Railway prototype. HO scale bodies, cast one piece from polyester resin, the range includes the 'C', 'X', 'Y' and series 1, 2 and 3 of the 'T' class. While the models are not up to the standard of some models on the market, the quality and price will suit many modellers wishing to become involved in Victorian Railway prototype. Further details will be included in AMRM when the various models are reviewed. PJM also advise that the production of the wagon body kits has ceased.

A few new books are now on the bookshelves including 'G42', Puffing Billy's Big Brother, by the Puffing Billy Preservation Society. Railmac Publications have released a few more booklets in their Locomotive Series, which now include ANR, SAR narrow gauge, Vicrail, QR, SAR preserved locos and S.R.A. locomotives. Each booklet describing an individual system.

Continued on page 64.

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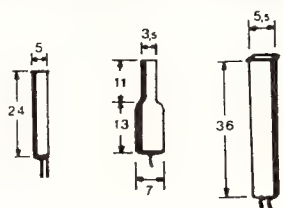
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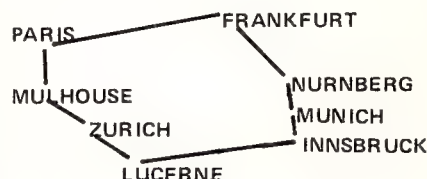


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AMRM NEWS

Continued from page 62.

Advice from Bergs Hobbies indicates that a few models will be arriving soon. Included in HO scale is brass ready to run FS and BS coaches, a 40 class white metal locomotive body kit, an injection moulded CW cattle van and in 1982, from Japan a D53 class locomotive. The orders for the C35 have been filled, and the currently available Z19 is selling steadily. Bergs have also had a supply of Sagami motors in stock, which are selling very fast and they hope to soon have the double ended shaft type available.

Broad Gauge Models, as well as diverging into importing the Railcraft track range, most of which should be available soon, are also to release a line of Australian trees. More details later.

The documentary film, 'Bound for the Alice', which was made by the South Australian Film Corporation in 1979 under commission to the Australian National (Railways) is to be released in 'Super 8' for Australian and overseas distribution. This award winning film will retail at \$65 and is available at S.A. Film Corpor-

ation and other outlets.

The 1981 Federal Government Budget added 2½% levy to make a levy of 17½% sales tax on the wholesale price of most Australian made models. Expect a price rise in most products if not immediately at least latter.

At last the diesel bodies from Casula Hobbies are in production. More precisely 'Main West Models' have overcome casting problems and have commenced production of the epoxy, one-piece diesel loco bodies. Samples of the (NSWSRA) 80 class have been seen, and first impressions are good. Reports however suggest that many will be waiting for some time for there is quite a waiting list, at Casula, for the models.

N.S.W. VEHICLE COUNTDOWN — 23

In 1955, the N.S.W.G.R. had 19 'KKG' type bogie horse boxes in traffic. Today, this class of vehicle no longer operates in revenue service.

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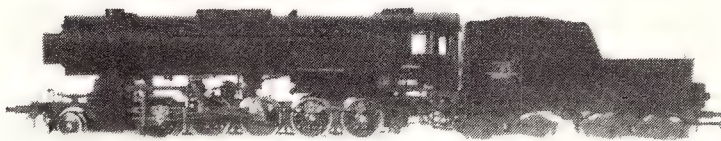
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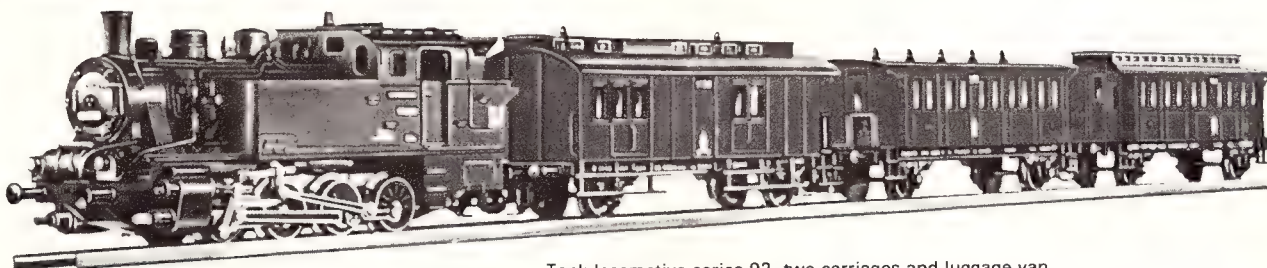
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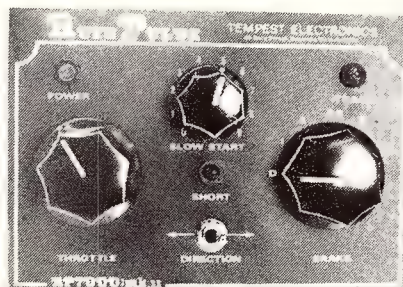
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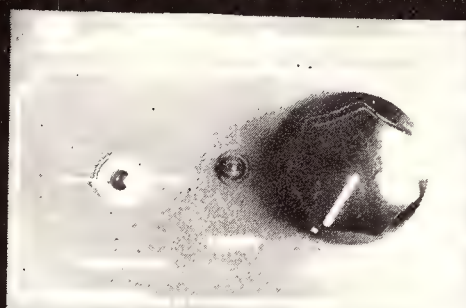
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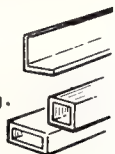
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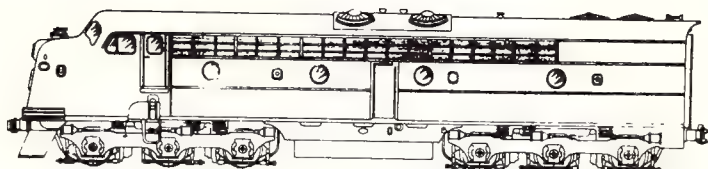
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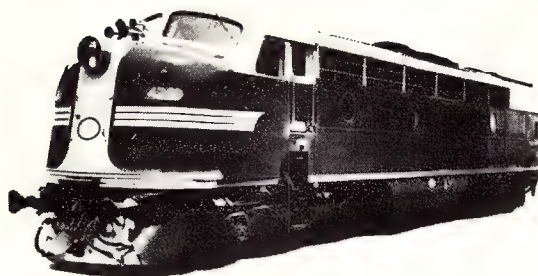


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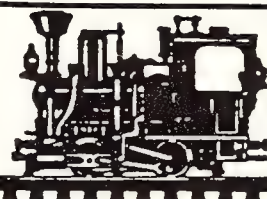
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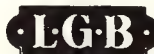
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PECO	MODEL POWER	FLOQUIL	HUMBROL	H & M
BACHMANN	RIVAROSSO	POLA	SENTINEL	MERTEN
KADEE	ROUNDHOUSE	HELIAN	BADGER	PREISER
ATHEARN	SHINOHARA		VOLLMER	TYCO
LILLIPUT	MARKLIN		M & J	ETC
LIFE-LIKE	PIKO		ROCO	ETC

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WAREHOUSE

76 Railway Street YENNORA N.S.W.

COMING NOVEMBER, 1981

PREMIUM QUALITY MODELS OF NSWGR 38 CLASS STREAMLINED

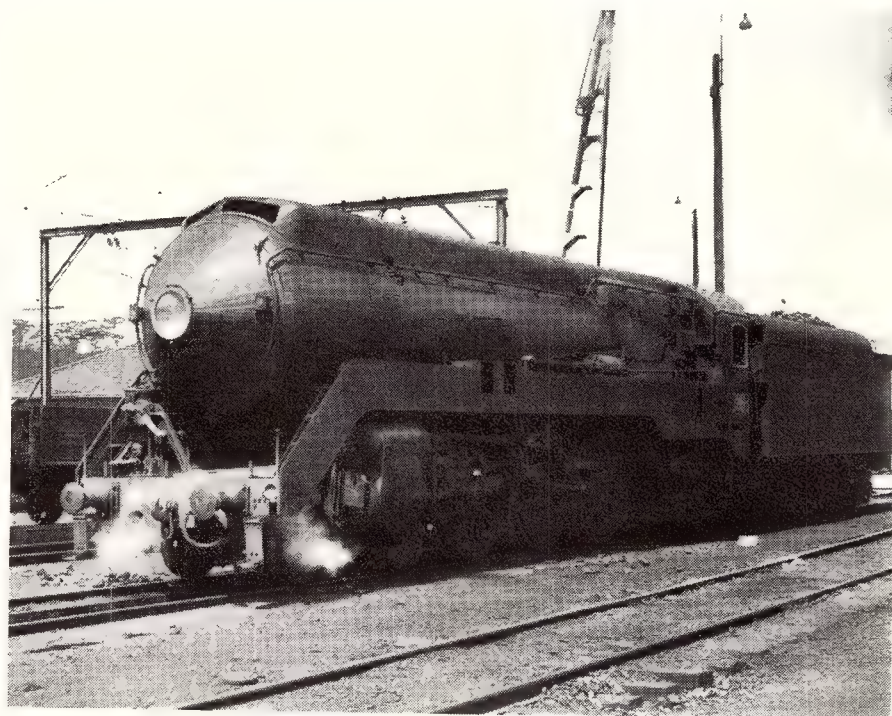


Photo by Jack Parker

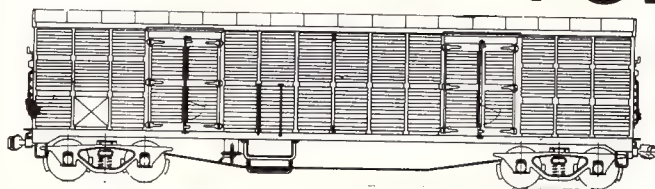
This eagerly awaited model by Samhongsu will be of premium quality with can motor and full detailing.

**ADVANCE ORDERS NOW BEING TAKEN
THE PRICE IS \$375.00
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KITS**

NSWPTC GLV/GLX (NLGF/NLGX) Louvre Van Kits.
Price — \$4.95

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We manufacture gears and worms in all sizes.

Good News for Tyco owners.
Gear and Pinion set for Tyco diesels, all metal \$2.50.

PIKO HO 1:87

Locos and Rollingstock
Quality at the right price.

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The ideal gauge . . . 12mm track width.

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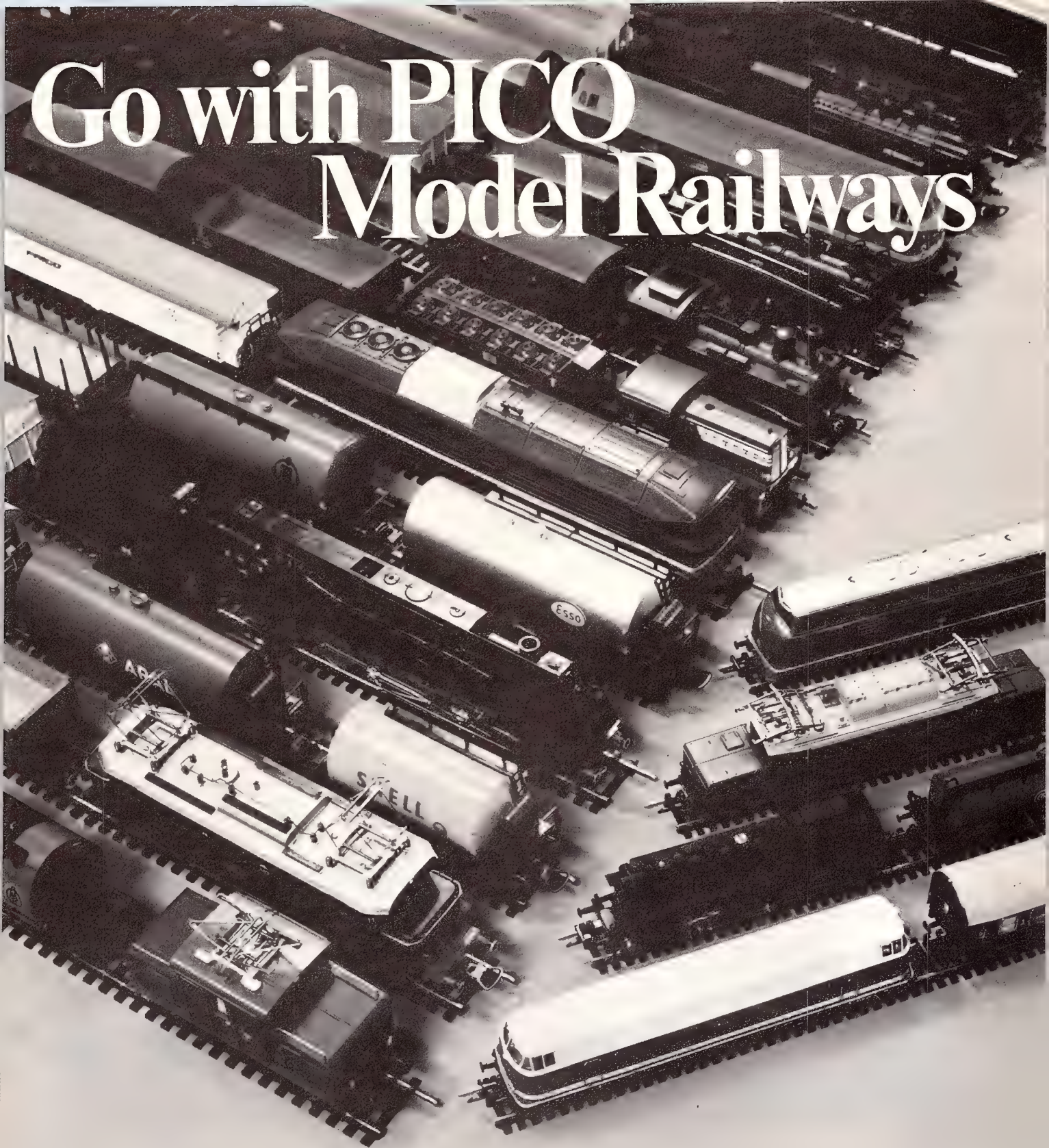
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(†We reserve the right to withdraw this offer at any time)

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Model railways are a fascinating hobby.
Reliable and longlasting Pico models
are true to life, built exactly to scale.

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All masters prepared by Stephen Johnson Models

- Bogie Baldwin Tender Kit, complete with bogies and wheels \$21.50
- NSW 'BD' open wagon complete with bogies and wheels \$10.50
- 40ft bogie water gin complete with bogies and wheels \$15.50
- LHG guards van kit, complete with bogies \$17.50
- GHG guards van kit, complete with bogies \$15.00

PRICES TO RISE BY 2½% WHEN 1981 BUDGET APPROVED

All prices include post and pack.

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We are now stocking the range of track products produced by RAILCRAFT PRODUCTS of the USA.

Flex-Trak (bundles of 6x3ft lengths)

Add 10% to all RAILCRAFT prices for postage & packing.

HO code 100	\$21-00	HO code 83	\$22-00
HO code 70	\$20-00	HO code 55	\$20-00
HO/HOn3 code 70 dual	\$25-00	HO/HOn3 code 55 dual	\$25-00
HOn3 code 70	\$20-00	HOn3 code 55	\$20-00
HOn3 code 40	\$20-00	HOn2½ code 55	\$20-00
N codes 70,55,40	\$18-00	Railjoiners all codes	\$2-50 pkt(50)

Weathered rail (bundles of 33x3ft lengths)

code 100	\$25-00	code 83	\$30-00	code 70	\$26-50
code 55	\$23-00	code 40	\$21-00		
Spikes small	\$3-50(pkt 1000)	medium	\$4-50(pkt 800)		

also a range of sleepers, gauges etc. send SAE for complete RAILCRAFT list
Also in stock :- A-WEST BLACKEN-IT (chemically blackens metals) \$4-00 (4ozs)
A-WEST WEATHER-IT (ages wood e.g. fence posts) \$4-00 (4ozs)

1982 WALTHERS 50 Anniversary Catalogue available late October. Now 576 pages listing over 260 manufacturers HO scale (Post Qld \$2.30, NSW \$3.00, Other \$3.50) \$8.95

1981 Con-Cor Source Books, Vol. 2 HO locos, Freight Cars, Pass. Cars, Detail parts incl. O scale section. Post \$1.10 \$3.00

Vol 3 Structures. 80 pages HO and O scale. Lists over 1046 kits in HO. Post \$1.10 \$3.00

1981 Con-Cor N scale catalogue. 96 pages of Locos, cars kits etc. Includes Con-Cor, Rivarossi, Atlas, Bachmann. Post \$1.10 \$3.00

NOW AVAILABLE IN N SCALE

Con-Cor N scale BUDD RDC-1. ATSF and Und; other advertised names to follow shortly. Powered \$49.95, Dummy \$19.95. Con-Cor PA-1, F-3 Powered \$53.95, Dummy PA-1 \$17.55; Dummy PB-1 \$14.95. Many roadnames in stock.

U50; Gas Turbine UP, SP, \$87.75
Kadee couplers to suit \$6.95
Kato PA-1 spare motors \$9.95

Also range of Japanese prototype models from Kato, Tomix, Green Max, incl. Brass models from Endo, Nakamura.

JNR C51 4-6-2 rtr. \$140.00, Kit \$119.00, \$99.00. C53 4-6-2 (as above).

JNR 2-6-2 Brass, Painted rtr in gift box \$140.00

ATHEARN HO SCALE

Advise that Budd RDC is programmed for production advance orders accepted. Hustler now available at \$15.40.

New range of Locos, Passenger cars, freight cars in stock. Refer prices in last AMRM or write for details.

Mail Order a Pleasure
BANKCARD WELCOME

Your one stop shop for N scale

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PO BOX 155, 15 Selwyn Street,
BEAUESERT 4285
Ph. (075) 41 1014

FSM

BUY AUSTRALIAN



FSM Streamline Kit & Tender fitted to a Lima C38 Locomotive

FSM C38 Tender Kit complete with wheels, etc. Posted \$60.27.

FSM C38 Streamline Kit, Inc: Cowling, Cone Front, Trailing Truck, Rear Bolster, Air Pump and Brackets, Whistle, Knuckle Coupling, Buffers, Loco and Tender Running Lights, Assembly Instruction Sheet. Posted \$25.62.



Z24 Loco & Tender
Posted \$123.00



Z25 Loco & Tender
Posted \$123.00



C35 MkII Loco & Tender
Posted \$153.75



D53 Loco & Tender
Posted \$174.25



D55 Loco & Tender
Posted \$179.37



Z18 Tank Loco
Posted \$99.93

Please specify Tender Type
required, also Std or Extd
Smokebox for the Z25 kit.

Price rise was due to the 19

S.M.R. 10 Class
Tank Loco
Posted \$174.25



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COBURG, 3058
VICTORIA

TELEPHONE (03) 478 0038

MAIL ORDER SPECIALISTS

WALTHERS 1982 HO CATALOGUE AND CRAFT TRAIN REFERENCE MANUAL

::: NOTE :::

This year marks Walther's 50th. year as a distributor of model railway supplies. To help celebrate this milestone the 1982 edition of their Catalogue will be bigger, brighter and more informative than ever before.

The 1982 Catalogue will contain 576 pages (90 more than this year's) featuring products manufactured by over 260 companies. A number of pages will be in full colour, illustrating many built-up HO Scale models, expertly finished. Thousands of parts, tools, electronic products, postcards, kits etc. are fully illustrated. There would be very few hobby shops in the world who could stock ALL the products listed in this Catalogue. We believe that with the combination of our new 'all airfreight from the USA' policy and our new computer based ordering system that McBEE'S offer the next best thing.

As comprehensive as the WALTHERS 1982 CATALOGUE will be, the information in it will be 'out-of-date' with the first addition, deletion or price rise. To help overcome this problem we will supply an 'UPDATE' service, obligation free, to all customers who purchase their Catalogue from McBEE'S. Commencing January 1982 we will forward a monthly update, listing any alterations to the Catalogue, to all customers on our lists. These updates will be based on Walther's own Newsletter and on customer feedback on the worth (or otherwise) of some of the thousands of items offered in the Catalogue. This service is free ONLY to modelers who purchase their Catalogue through McBEE'S.

Walther's 1982 HO CATALOGUE and Craft Train Reference Manual \$8.95
POSTAGE:- Inside Victoria (includes Albury and Mildura) \$1.75
All other States \$3.00

We are taking orders now and delivery should be about mid-December.

SIMPSON PRODUCTS

O Scale BRASS STRAPSTOCK

244 .010" x 3 '0' inches \$2.30
245 .010" x 2 '0' inches \$2.30
246 .010" x 1.5 '0' inches \$2.30
252 .015" x 3 '0' inches \$2.30

HO Scale BRASS STRAPSTOCK

254 .006" x 3 HO inches \$2.30
255 .006" x 2 HO inches \$2.30
332 .010" x 3 HO inches \$2.30

Brass Strapstock packs contain 10 pieces, each 4" long.

Modeller's Miniature T-SQUARE.

Made of machined clear acrylic plastic. Blade is 3.5" long. Use it anywhere a larger square will not fit. eg. positioning grab irons or decals \$3.75

Miniature PARALLEL CLAMP.

Machined from brass and steel, includes Allen Key.. .. \$9.99

On3 Link and Pin Coupler Kit.

Kit contains:- 1 pair of On3 couplers, 12 pins, 16 links & 2 detailed draft gear boxes \$3.00

HORNBY ZERO ONE

At long last the first of the new generation controllers has arrived in Australia.

Master Unit/Controller .. \$169.95

Slave Controller - maximum of 3 can be used \$44.50

NEW! Hand Held Slave Controller

Can be used with or in place of

'normal' slave controller. \$44.50

Loco Modules - up to 16 can be

"on line" at any one time. \$21.75

Different locos can share the same "channel" number if they are permanently coupled or are stored on isolated track sections.

Accessory Module - for points or signals. Up to 25 can be used \$45.00

Conductive Paint for coding

loco modules - per bottle \$3.60

PLEASE NOTE:- Postage on Zero One

Master Unit (registered) is \$6.00

Prices in this ad. are subject to alteration because of the recent increase in sales tax rates. Pre-budget prices will apply only while stocks last.

:::::::::::

DETAIL ASSOCIATES

NEW in HO

7004 Ponderosa Tank. The ideal companion for your Branchline Roundhouse. This kit captures all the backwoods character of a typical open top water tank. Features precut Kappler scale wood, Grandt Line plastic castings, special Detail Associates cast concrete footings and illustrated instructions and template \$33.00

DETAIL ASSOCIATES

NEW in N Scale

8021 Sand Dome Baldwin, intermediate style [2] \$1.50
8022 Steam Dome Baldwin, intermediate style [2] \$1.50
8023 Stack, Baldwin, intermediate style [2] \$1.90
8408 Switch Stand, Target Type [1] \$1.50
8409 Call Box, fire [2] \$1.50
8410 Call Box, police or taxi [2] \$1.50
8411 Parking Meter [2] \$1.50
8412 Garbage Can [2] \$1.50
8413 Manhole Cover [2] \$1.50
8414 Air Compressor with tank [1] \$1.50
8415 Welding Cart/tank [1] \$1.50
8416 Drill Press/Stand [1] \$1.50
8417 Grinder/Stand [2] \$1.50
8419 Mailbox, Kerb Type [2] \$1.50
8420 Passenger Car Steps [4] \$3.40

BROAD GAUGE BODIES

At the time this ad. appears the BGB model of a 'round top' SAR Goods Shed with Platform will be in stock. Also due early October is the VicRail ZF Guards Van. This model has been delayed but we believe it will be worth the wait. We have full stocks of BGB products including their new VR decals in black or white, small VR tarp, decals and SAR M, MG, MRP code board decals all at \$1.00 a set.

PO Box 144, Coburg, is registered at 535 Plenty Road, Preston. Items in this ad are a selection only. Any other enquiries please write. We are a licensed second-hand dealer.

Our shop is located at
535 Plenty Road
East Preston

Hours Mon-Wed 4pm-7pm
Thurs. Fri 12 noon-9pm
Sat 9am-1pm

PLEASE all Mail Orders and

Correspondence to

PO BOX 144,
COBURG 3058

POSTAGE RATES:-

We have a MINIMUM Handling charge of \$1.00 on ALL orders, to which must be added the following additional charges -

On orders under \$5.00 - Nil
\$5.00-\$14.99 extra 50c
\$15.00-\$29.99 extra \$1.00
\$30.00-\$49.99 extra \$1.50
\$50.00 and over - Nil
Airmail extra \$3.00
Registered extra \$2.50

While we make every effort to have all articles featured in this ad in stock, heavy sales, delivery delays etc may occasionally force us to backorder

Write for details of our IMPORT SERVICE from WALTHERS and CHAMPION DECAL CO



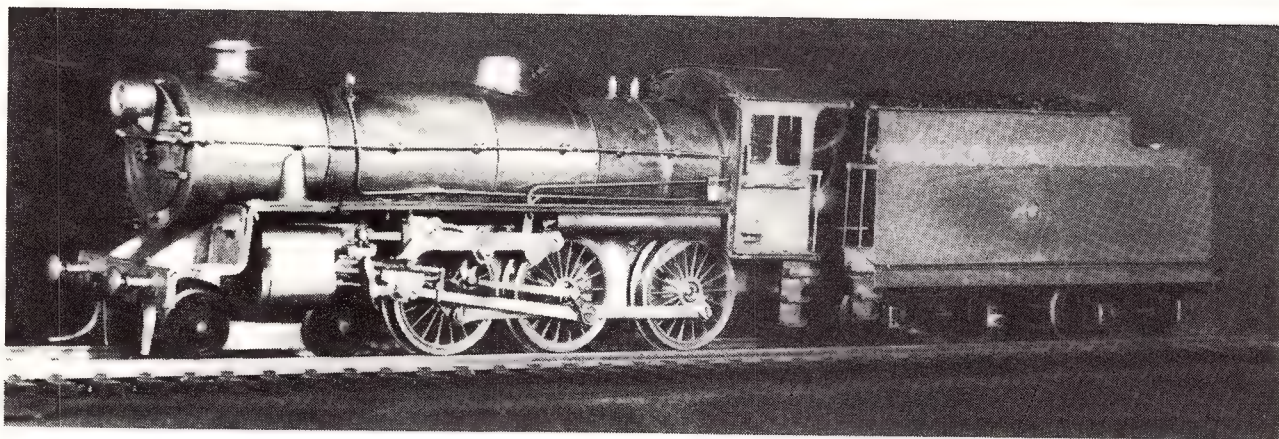
We welcome payment by BANKCARD or AMERICAN EXPRESS. Please include card number, expiry date, authorisation and signature. Do not send CASH through the Mail. For prompt service order on our order form (available free on request) with general enquiries on a separate sheet

McBEE'S

BUILD THIS FABULOUS H.O. C 36 LOCO WITH AUTOMATIC POWER-SHIFT FULLY WORKING WALSCHAERT VALVE GEAR

Kits now available include —

- 11 sheets fully-detailed drawings (twice full size)
- 13 pages instructions and material list
- all brass sheet required (including pre-punched narrow slots for valve gear)
- hollow brass bar (for smoke box and boiler centre section)
- brass bar for main-frame spacers, accurately machined to width
- 3 pairs machine-cut gears for power-shift drive



This is NOT a complete kit — wheels, motors, main drive gears, brass bar stock and detail parts are not included.

PRICE: \$47.50
(postage and packing
included)

Kits obtainable only from:
D. G. Hoskins
P.O. Box 331, Mittagong, N.S.W. 2575

ARCADE SIGNAL BOX OCKER RAILWAYS' IN MODEL VR AND SAR HO MODELS

LIMA VR 'S' diesel	\$39.95	BGB SAR 'Brighton Cement' van body	\$9.95
LIMA VR 'F' diesel (new paint job required)	\$37.50	BGB VR 'V' or 'VF' 2 door louvre van body	\$5.95
LIMA ANR 'GM' diesel (almost)	\$37.50	BGB VR 'VF' 4 door louvre van body	\$5.95
LIMA SAR '930' diesel (almost)	\$35.00	BGB VR 'VP' 4 door louvre van body	\$6.25
LIMA NSWGR '42' diesel (almost)	\$39.95	BGB VR 'VSX' louvre van body	\$6.95
LIMA 'Overland' cars (almost)	\$8.65 to \$9.25	MnJ DECALS	per sheet \$1.00
LIMA 'Overland' car carrier (almost)	\$9.95	NORTHYARD 10.5mm 10 spoke wheels	ea \$0.65
LIMA 'Indian Pacific' cars	\$7.95 to \$8.65	NORTHYARD 10.5mm disc wheel	ea \$0.65
LIMA VR & SAR 'ELX' open wagons	\$7.95	T & BJ VR 'GY', 'U' axle guards	ea \$0.30
LIMA SAR '8300' brake van	\$6.95	LIMA NSWGR 'TAM' sleeping cars	\$11.25
LIMA SAR flat car with containers	\$6.50	LIMA NSWGR 'MBX' first class coach	\$11.25
LIMA containers	4 for \$3.95	'OUR BRANDS' VR freight red enamel paint	bottle \$0.60
BGB SAR 'M' box van bodies (2 roof types, 2 door types)	ea \$5.95		
BGB SAR 'OB' open wagon bodies (2 types)	ea \$5.95		
BGB SAR 'DWF' louvre van body	\$4.50		
BGB SAR 'OF' open wagon body	\$4.50		
PECO underframe for 'DWF' and 'OF'	\$2.65		
BGB SAR 'DS' louvre van body (Also VR, V1, V2, V3)	ea \$5.95		
BGB SAR 'SE' explosive van body	\$5.85		
BGB SAR 'SGMX' open wagon body	\$6.55		

N SCALE

WELCO VR 'AS/BS' coach kit ea \$13.40
 FYBREN VR 'ELX' with bogies \$6.95
 FYBREN VR 'ELX' less bogies \$5.00
 WELCO 'S' diesel body kit \$12.95

For the HO 3 1/2 Modeller we stock LIMA's 'other SAR' rolling stock and so called 'Australian' goods wagons which look good on TT-3 bogies and underframes [if you can get them]. We don't stock them, try the Dockyard.

For the BRITISH modeller we carry — MAINLINE OO, HORNBY OO, LIMA OO and N.
 For the YANKEES we have — ROUNDHOUSE, PEMCO, ATHEARN and TRAIN MINIATURE.
 For the EUROPEAN fans we have — LIMA, HO plus ROCO HO & N.

Any manufacturer wishing a retail outlet for Australian models should approach us. We believe in catering for Aussies wanting to model the Ocker railways.

AND BANKCARD IS WELCOME.

Arcade Signal Box

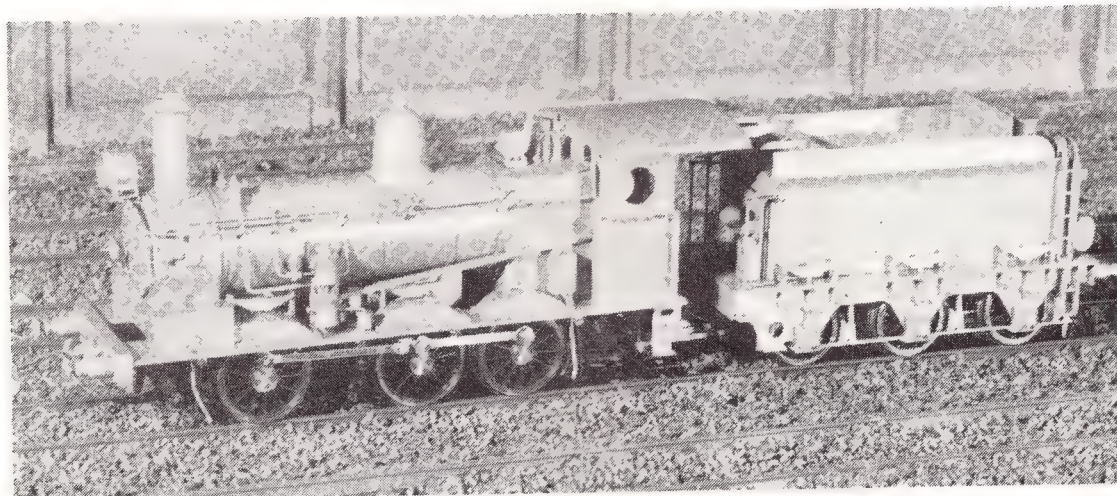
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Tel: (03) 354 8519

Let us 'train' you

NEWS FROM BERGS

P.O. Box 527
Parramatta, 2150
Ph. (02) 635 8618



NSWGR Z19 in HO scale. Ready to run, hand crafted brass..... Price: \$250.00
AVAILABLE NOW... BE QUICK, IT IS A LIMITED RUN.

Coming in October in HO scale.

Brass, handcrafted ready to run 'FS' and 'BS' coaches. Price to be advised.
Limited Run

Prototype photograph Bob Gallagher

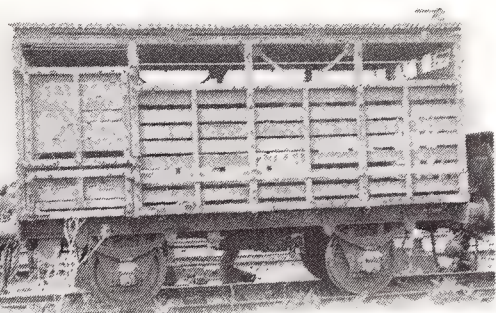


The coach depicted in the above photograph is a RBS which has the same exterior appearance as a BS coach.

Our long awaited whitemetal kit of the 49 class is now available and is priced at \$60.00 plus mechanism.

A whitemetal body kit for the popular 40 class diesel is now being prepared.

Prototype photograph Bob Gallagher



Our next injection moulded kit, a 'CW' cattle wagon, is presently being manufactured and should be available late in 1981.

Our next brass locomotive from Japan will be the D53 class 2-8-0 'Standard Goods' and is scheduled for early to mid 1982.

Call in and browse around... Mail order a specialty.

Berg's Hobbies Pty. Ltd.

261 Church Street, Parramatta
2150

Bankcard &
American Express
Welcomed.

BRISBANE HOBBY EXHIBITION

R.N.A. SHOWGROUNDS

22nd to 28th NOVEMBER 1981

SUN 10 am - 7 pm

MON-FRI 12 - 9.30 pm

SAT 9 am - 6 pm

RAILWAYS — SHIPS — PLANES — CARS

LIVE STEAM — ARTS — CRAFTS

TRADE DISPLAYS

ADMISSION: ADULTS \$1.00

CHILDREN 50 cents

PENSIONERS 50 cents

PO BOX 161 CORINDA QLD 4075

IMPORT HOBBIES

Australian Prototype
AR Kits HO (NSW) \$ c
GLX/GLV (NLGX) 4.45
GLX/GLV (NLGX) 5 for 21.00

TRAX Kits HO (NSW)
LCH Coal Hopper 5.25
TRC Refrigerator Van 7.00
S Open Wagon 4.50
CCH Coal Hopper 5.75
RSH Rutile Hopper 5.75
K Open Wagon 5.75
RU Wheat Hopper 5.75

IBERTREN N (NSW)
44 CI DE 1 Pwr Unptd 28.00
44 CI 1 Pwr 1 Dummy Unptd 38.50
Painted Models incl decals \$5.00
per unit extra

LIMA HO (NSW/VR/SAR/ANR)
ANR GM C1 DE 37.10
VR S Class DE 37.10
NSWR 42 CI DE 37.10
NSWR 44 CI DE 39.50
NSWR C38 Green or black 63.00
NSWR TAM or MBE 10.00
VR ELX or SAR ELX 7.15
SAR 930 C1 DE 39.50
SAR 8300 Brake Van 7.85
MSWR LV Louvre Van 4.35
ANR IP 2nd CI Coach 8.75
ANR IP Diner 8.75
ANR IP Power Van 8.75
NSWR/VR Sleeper 8.75

BERGS HO (NSW)
Suburban Station 13.00

AMRI Wheel Sets HO
070 10.5mm Spoked 4 for 3.45
071 10.5mm Disc 4 for 3.45

KADEE Wheel Sets HO
520 33" Frt 12 for 7.00
521 36" Pass 12 for 7.95

US Prototype

ATHEARN HO
SDP 40 AT&SF, SP, NYC 27.85
F7A PRR, SP, BN, AT&SF 27.30
S12 SF, SP 27.30
SW1500 BN, UP 27.30
F45 GN 27.85
FP45 Milw 27.85
SD9 AT&SF, Milw, PRR 27.85
GP35 CB&Q 25.50
DD40 BN, B&O (2 mtrs) 36.00
40' Box Car GN, PC 3.50
Std Caboose Milw, CB&Q, UP, NP 4.25
50' Double Door Auto Box D&TS, NS, CB&Q, GN, NYC 3.95
50' PD Box WP, Milw, ART 3.95
50' SB Box GN, KCS 3.95
Pulpwood Car SP, CB&Q 3.50
40' 1 dome Tank Conoco & SP 3.50
50' Mech Reef Milw, BREX, NP 3.95
50' PD Reef OB CB&Q, GN, PFE, AT&SF 3.95
Gondola w/Cannisters Erie 4.50
Cov Gondola SR, CB&Q, SP 3.95
54' Cent Flo Hopp Diam Pl, Un Car, Sincl 4.55
40' Grain Load Box CB&Q, GN 3.95
40' Box (Steam) CB&Q, NP, UP, SF (Various) 3.50
40' Reefer (Steam) SF Chief, NP 3.50
50' Auto Box (Steam) SSW, SF, SP, UP, D&RG 3.95
50' 1 dr Box SF (Various), NP, UP, SP, SR 3.95
40' Wood Reef Swift C&NW, WFEX, CB&Q 3.95
50' PD Box Evergreen Nestles 4.25
54' Cov Hopp NP, Soo 4.70
57' Mech Reef AT&SF, B&A, BREX 4.90

E&B HO
65' Mill Gond AT&SF PRR, UP \$ c 11.15
70 t Cov Hopp SP, SF, Milw 9.75

SCALECOAT
Paint Remover (16oz) 9.75

KADEE HO
No 5 Couplers 2pr 2.95
No 5 Couplers 20 pr 28.00
Nos 6,7,8,9 and 16 2 pr 3.50
Nos 6,7,8,9 and 16 Asst 20 prs 33.00
231 Greas-em 1.80
308 Uncouplers 2.85
321 Uncoupler 3.95
634 Centre Springs 1.35
500 Bettendorf Trucks 1 pr 6.30
501 Archbar Trucks 1 pr 6.30

AUTOPULSE
AP 3000 Mk II Throttle 23.85
AP 7000 Mk II Inertia Throttle 42.75
Point Motor Control Module 11.65

NEWS BITS
By the time you read this we hope to have stocks of Rails North models, NSW HO kits, ABL NSW HO kits and BGB SAR and VR HO kits. We have large supplies of Mnj Decals suitable for NSW, VR and ANR Diesels, and rolling stock all at \$1.00 per set. Latest news from Athearn indicates that the Hustler Diesel Switcher should be back in production about now with an estimated cost of \$14.00 landed here. They also hope to have both versions of the RDC again in production soon. Estimated cost is \$22.50 for Pwr and \$11.95 for Dummy. All items that are sold out will be back ordered and supplied at advertised price unless you advise otherwise.

Please note postage is extra on all items and is charged at standard Post Office rates plus 35¢ handling fee. Please allow extra any excess refunded.

IMPORT HOBBIES

4 Windemere Court,
ALBANY CREEK, QLD. 4035
Telephone: (07) 264 2061

FOR TRAINS AND TRAIN ACCESSORIES

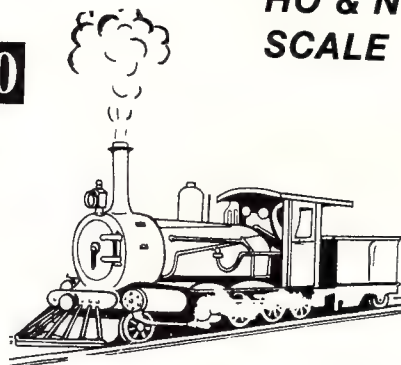
The
Model Railway
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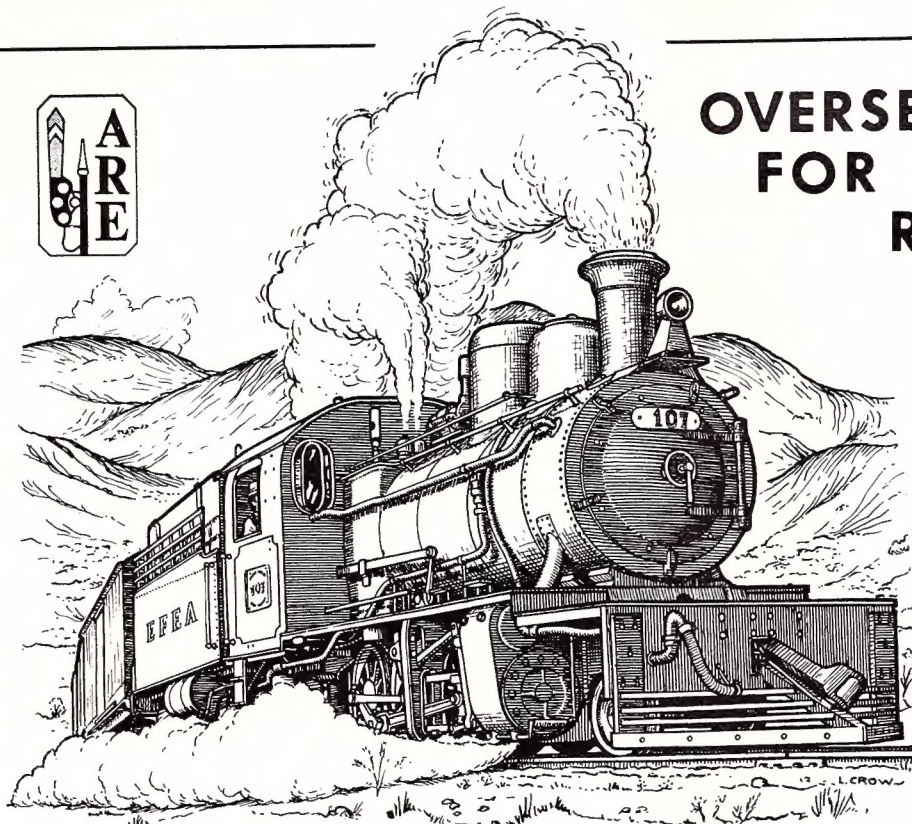
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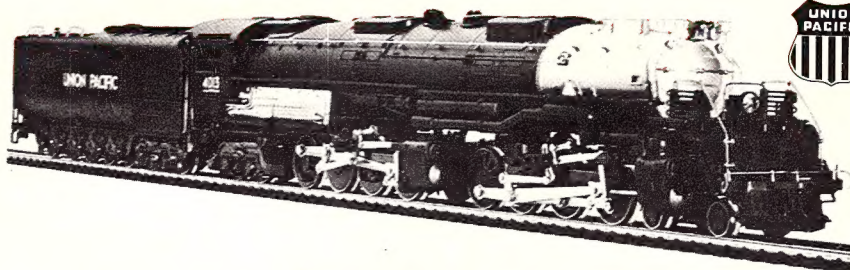
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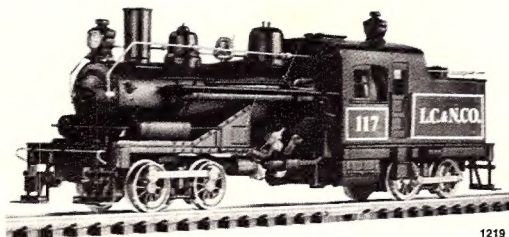
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